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Studies on the impact of job characteristics, social roles and gender

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Studies on the impact of job characteristics, social roles and gender

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CHAPTER 1

GENERAL INTRODUCTION

General Introduction

Reduction of the high costs due to incapacity benefits in the Dutch population became a focal point of governmental policy during the first years of this century. Mental health problems were the main reason for work incapacity in one out of three new recipients of incapacity benefit (ministerie van Sociale Zaken en Werkgelegenheid, 2003). Results of the NEMESIS-study (Netherlands Mental Health and Incidence Study) showed that one out of five employees in the Netherlands suffered from a diagnosable mental disorder, particularly anxiety and depressive disorders, measured by worldwide applied DSM-III criteria (Laitinen-Krispijn & Bijl, 2000). The high prevalence of these mental disorders was not unique for the Dutch population, but comparable with the prevalence in other European countries (Alonso et al., 2004b). Since it became clear that many employees have mental health problems and are at risk for future work incapacity, these outcomes showed the urgency to further explore the relationship between work, specific job characteristics, mental health and work functioning, which resulted in this dissertation.

Depressive and anxiety disorders

The European Study of the Epidemiology of Mental disorders (ESEMeD) showed that about 13.6 % of the European general population reported any anxiety disorder (social phobia, specific phobia, generalized anxiety disorder (GAD), agoraphobia, panic disorder or post-traumatic stress disorder (PTSD)) during their lifetime, and 6.4% had any anxiety disorder in the 12 months preceding the interview. For major depressive disorders the prevalence was 14.0% in lifetime and 3.9 % in the last 12 months (Alonso et al., 2004b). These disorders were the most common disorders, that co occur frequently. About 40% of the persons with anxiety disorders, also have major depressive disorder in lifetime. And even 60% of persons with a major depressive disorder in lifetime; also have anxiety disorders in lifetime (Levine et al., 2001). Anxiety and depressive disorders have major impact on daily functioning; disabling people and reducing quality of life severely (Alonso et al., 2004a; Ormel et al., 2008). In this dissertation diagnoses of anxiety and depressive disorders are indicators for mental health status. In this dissertation, diagnoses of depressive and anxiety disorders form the main indicators for mental health status.

The relationship between work and mental health

Many previous studies on work and mental health focussed on negative consequences of jobs for mental health. People can get stressed due to working conditions and may develop depressive and anxiety disorders. High demands at work, poor working conditions or a combination of responsibilities at work and at home may burden employees and cause stress and mental disorders (Karasek & Theorell, 1990; Stansfeld et al., 1999; Nordenmark, 2002; Sachs-Ericsson & Ciarlo, 2000; Evandrou et al., 2002; Barnett & Hyde, 2001). However, work can be seen as a resource for mental health too. Having a job provides an income and possibilities for social companionship and self-realization (Schaufeli W. & Bakker A, 2004). Beside that, mental disorders such as anxiety and depressive disorders definitely not only have their originating factors in work, but may be due to a larger combination of genetic and environmental risk and vulnerability factors (Kendler et al., 2003). And irrespective of the origin of the mental disorder, poor mental health of employees affects functioning at work negatively (Kessler et al., 2006) (Druss et al., 2000) (Goetzel et al., 2004), and may result in work incapacity. Work incapacity and subsequently, job loss, is loss of an important resource that may affect the course of the depressive or anxiety disorder negatively. Therefore, there are three important aspects of work that deserve attention in this study on work and mental health: 1) work status, that is having or not having a job, 2) specific characteristics of the job and 3) employees' functioning at work. Furthermore, there are two important directions in the relationship between work and mental health distinguishable. It is important to know more about the effect of work (both having a job or not and the characteristics of it) on developing depressive and anxiety disorders, but also how workers with depressive and anxiety disorders function at work and what working conditions may help them to continue working (without impairments). Focusing on both directions in the relationship between work and mental health may help to find possible points of action in prevention of work incapacity due to common mental disorders such as depressive and anxiety disorders.

Social Environment

Whether work has positive or negative consequences on mental health, may depend on the social environment. In the first place, the combination of work with other social roles, such as being a partner and parent, may impact mental health (Greenhaus & Beutell, 1985). However, it is not clear whether the combination of a job, being a partner and a parent is positive or negative for mental health. According to the role accumulation theory, combining more social roles has a positive effect mental health (Sieber, 1974; Marks, 1977). Some studies found support for this theory (Aneshensel et al., 1981; Sachs-Ericsson & Ciarlo, 2000; McMunn et al., 2006), but support was also found for the opposite: combining work and family roles

may be a burden and therefore be negative for particularly women's mental health (Frone, 2000; Wang, 2006). Of course, whether social roles are positive or negative for mental health will likely not just depend on the presence but also on the quality of these social roles. A good quality of the social environment may provide possibilities as a buffer for negative consequences of poor working conditions. For example, good social support by close persons such as a partner has positive effects on mental health (Olstad et al., 2001) (Loscocco & Spitze, 1990) and may also have a buffering effect in the work and mental health relationship.

The quality of work

The effect of work on mental health will also depend on the quality of it. According to the Demands-Control model (Karasek & Theorell, 1990), high psychological demands of a job can cause psychological strain. This may particularly be the case when the worker has low control about his tasks, as reflected in a low decision latitude or tasks that make a low appeal on skills. In contrast, the combination of high job demands and high job control could also motivate the worker to develop new adaptive behaviour that can satisfy the worker and may compensate stress (buffer hypothesis). Later, this model was adjusted by adding a new aspect of the work environment: co-worker support. Although support for the buffering effect of job control in the relationship between job demands and mental health is inconsistent, support for a direct effect of job demands and job control on mental health was found in several studies (M.van der Doef & S.Maes, 1999; Karasek et al., 1998; Schaufeli W. & Bakker A, 2004; Demerouti et al., 2001). In addition, the interacting effect of co-worker support was added into the model (Johnson & Hall, 1988). However, most of these studies have a cross-sectional design, which make it impossible to make any tentative conclusions about causal ordering. In addition, poor mental health can influence the assessment of job characteristics negatively which can bias cross-sectional associations. Beside that, most studies that examined the association of job characteristics with mental health measured mental health by symptoms of mental disorders, but not diagnoses of mental disorders.

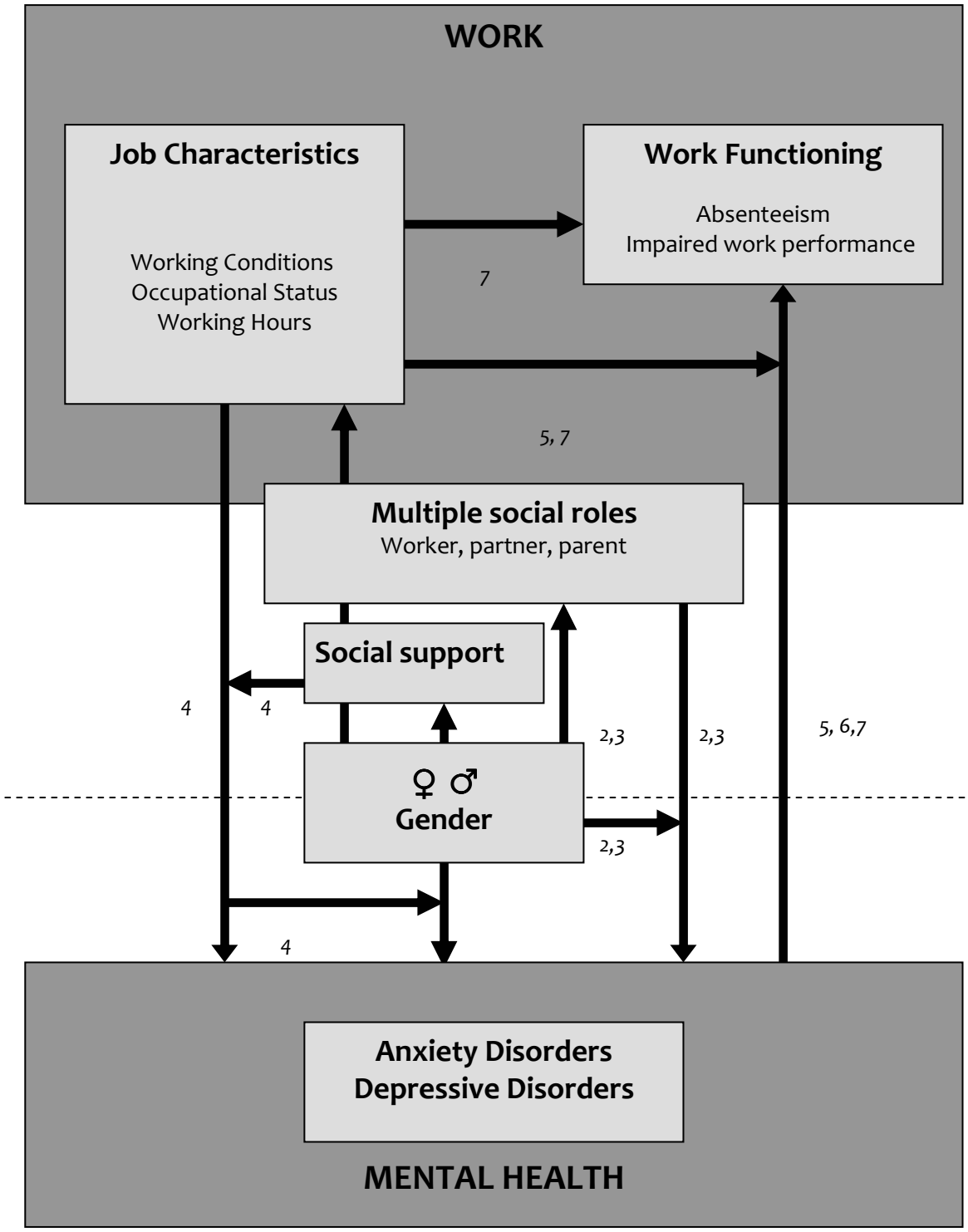
Functioning at work

Employees with anxiety and depressive disorders are likely to experience problems with functioning at work. Absenteeism from work is high among workers with depressive and anxiety disorders (Druss et al., 2000; Stewart et al., 2003), although not all of them are absent from work. Workers with anxiety and depressive disorders that are not absent may experience problems with work performance. Anxiety and depressive symptoms can disturb the ability to concentrate, may reduce the level of energy and affect motivation while working. However, not all persons with anxiety and depressive disorders are absent from

work, and some of them even function at work very well. Knowing more about conditions at work and psychopathological characteristics of workers with anxiety and depressive disorders that affect work functioning can help to develop preventive strategies for absenteeism and work incapacity caused by depressive and anxiety disorders.

The role of gender

The prevalence of depressive and anxiety disorders is approximately twice as high among women as among men (Alonso et al., 2004b; Bebbington et al., 1998; Bijl et al., 1998; De Graaf et al., 2002; Weich et al., 1998). Also among the new recipients of incapacity benefits in the Netherlands during the last decade of the twentieth century there was a remarkable higher number of women than men who had become incapacitated for work due to mental health problems such as anxiety and depressive disorders (van der Giezen et al., 1998). The question rose whether there were specific aspects of women's work roles that contributed to this gender difference in mental health. Two main aspects of women's work were seen as possible explanation for the high rates of incapacitated women due to mental health problems: the work–family role combination and a poorer quality of work among women (Bekker, 2003). Being a worker was a relatively new common social role among women in most western countries, since they had entered the labour market in large numbers only since the past decades. This new social role did not replace another social role, but was added to the traditional female social roles as caregivers to the family. In contrast, men did not naturally add the caring role to their responsibilities. Although jobs provide possibilities for self-realization and make women more economically independent of their partners, the family and work role combination may be a double burden for women causing stress and mental illnesses. The total workload of jobs and caring responsibilities together is higher among women than among men (Gjerdingen et al., 2000). One way to cope with this might be working in part-time jobs. However, compared to full-time jobs, part-time jobs offer usually poorer career perspectives and lower economic profits than fulltime jobs. In general, the mean occupational status is lower among women than among men (Fagan & Burchell, 2002).Women are underrepresented in the highest segment of the labour market, whereas the mean education level among women is equal or even higher than among men. Women generally report poorer job characteristics and wages than male counterparts (Blau & Kahn, 2000). Therefore, the work-role may be less positive for women's mental health compared to men's mental health, and consequently the relationship between work and mental health may depend on gender. Work aspects may contribute to the explanation of the gender difference in anxiety and depressive disorders. The combination of social roles, the number of working hours, and the quality of the job may be involved in this.



* *The numbers in the figure refer to corresponding chapters.*

Model 1. The relationship between work and mental health in the context of social roles, social support and gender*

Aim and outline of this dissertation

As outlined above, in the relationship between work and mental health social roles, support and gender may play modifying roles. Model 1 illustrates the relationship between work and mental health in the social context, as described in this chapter. This model forms the basis for this dissertation.

The first part (Chapter 2, 3, 4) of this dissertation focuses on the effect of work on mental health, using data of NEMESIS (Netherlands Mental Health Survey and Incidence Study, N=7067) conducted by the Netherlands Institute of Mental Health and Addiction (Trimbos Insituut). In Chapter 2, the effect of having multiple social roles (work, partner, and parent) on mental health and the difference between men and women in this relationship was examined. It also describes the contribution of social roles to the gender difference in mental health. Chapter 3 examines in a longitudinal design whether the number of social roles or the quality of the individual social roles is important for mental health and differs for men and women. In Chapter 4, the longitudinal relationship between working conditions and depressive and anxiety disorders are examined, bases upon the Job Demand/Control Model (Karasek & Theorell, 1990). It also explores the possible contribution of working conditions on the explanation of the gender difference in de incidence of anxiety and depressive disorders.

The second part of this dissertation describes the effect of mental health on work functioning. Chapter 5 describes the associations between reactions at work and being fit for work in a sample of 135 outpatients of a psychiatric clinic, AMSTAD (Amsterdam Study of Anxiety and Depression). The associations of depressive and anxiety disorders with functioning at work and the differential role of more detailed characteristics of the diagnosed anxiety and depressive disorders are described in Chapter 6. For this study, a sample of the NESDA study (the Netherlands Study of Depression and Anxiety, N= 2981) was used. In addition, Chapter 7 reports the effect of working conditions on work functioning and has the aim to find job characteristics that contribute to better work functioning among workers with depressive and anxiety disorders. Finally, a summary, general discussion and conclusions are provided in Chapter 8.

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CHAPTER 2

WORK AND FAMILY ROLES AND THE ASSOCIATION WITH DEPRESSIVE AND ANXIETY DISORDERS: DIFFERENCES BETWEEN MEN AND WOMEN

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Abstract

Background This study examined associations of (combinations of) social roles (employee, partner and parent) with the prevalence of anxiety and depressive disorders and whether social roles contribute to the explanation of the female preponderance in these disorders.
Method This was a cross-sectional study using data from 3857 respondents aged 25-55 of NEMESIS (Netherlands Mental Health Survey and Incidence Study). Depression and anxiety disorders were measured using the CIDI 1.1.
Results The OR of depressive disorders and anxiety disorders among women compared to men was 1.71 (95% CI: 1.40 – 2.10). Among both genders, the partner-role was associated with decreased risks of depression and anxiety and the parent-role was not. The work-role was a significant protective factor of depression and anxiety for men (OR = 0.40; 95% CI: 0.24 – 0.69) but not for women (OR = 0.86; 95% CI: 0.66 – 1.12). The effect of the work-role was positive among women without children (OR = 0.28; 95% CI: 0.14 – 0.54), but not among those with children (OR = 1.01; 95% CI: 0.75 – 1.35). The gender risk for depression and anxiety decreased significantly by adding the work-role variables into the model. *Limitations* This was a cross-sectional study. This study did not give insight into the quality of social roles.
Conclusion The work-role contributed to the explanation of the female preponderance in depression and anxiety disorders. Considering depression and anxiety among women, a focus upon quality and meaning of the work-role, and barriers in combining the work-role and parent-role may be essential.

Work and Family Roles and the association with depressive and anxiety disorders: Differences between men and women

Introduction

In modern societies, the prevalence of depression and anxiety disorders is highest among people in their midlife, during their reproductive years. The prevalence is also consistently higher among women compared to men (Alonso et al., 2004; Bebbington et al., 1998; Bijl et al., 1998; Kessler et al., 2003). Aspects of the social environment may contribute to the gender difference in the risk of depression and anxiety disorders (Maier et al., 1999, Picinelli & Wilkinson, 2000). Social roles, such as working in a paid job, being a partner, parenthood, and the combination of these roles might have a part in this. Concerning their mental health, men probably profit more from certain social roles than women.

Working can be advantageous as well as disadvantageous for the mental health (Stansfeld et al., 1999; Siegrist, 1996; Karasek & Theorell, 1990; Iacovides et al., 2003). In general, working people have a better mental health compared to people who are not working (Alonso et al., 2004). Having a job provides a meaningful daytime program, increases the social economic status, and provides possibilities of self-realization (Sieber, 1974). On the other hand, job demands can be a source of stress, resulting in mental health problems (Karasek & Theorell, 1990; Maslach et al., 2001; Virtanen et al., 2006; Plaisier et al., 2007). Besides having a job or not, also the amount of working hours may play a role in the association of work with mental health. Compared to part-time jobs, fulltime work usually provides more money and better careers. Nevertheless, working many hours may overburden someone and therefore may have a negative impact on mental health. Particularly in the case of combining social roles, such as work combined with childcare, scarcity of time and energy might be a cause of stress. Because generally women have more childcare tasks than men, more hours of paid work may increase the risk for stress among those with children. Furthermore, women on average have a poorer quality of work compared to men: less job control, a lower occupational level, and lower salaries (Crompton & Harris, 1998; Fagan & Burchell, 2002; Plaisier et al., 2007). Therefore, among women employment may have a less favourable impact on mental health than among men.

Family roles, such as being a partner or a parent may also be associated with mental health. Being a partner is associated with a positive effect on mental health (Horwitz et al., 1996, Helbig et al. 2006). The partner is one of the most important sources of daily emotional

support (Wade & Kendler, 2000). Some studies have found gender differences in the effect of spousal support on mental health, e.g. Schwarzer & Guiterres-Dona (2005) showed that men profit more from spousal support compared to women. In addition, the parent-role, and its effect on mental health may differ for men and women. Helbig et al. (2006) found an association of parenthood with lower rates of particularly depressive disorders that was stronger among men than among women. Although men's participation in domestic work increased during the last decennia, in couples with children women generally spend more time on domestic work such as child care compared to their husbands (Barnett et al., 1994; Sullivan, 2000). This may also depend on the age of their children; younger kids need more care, and therefore make a larger appeal to time and physical energy of parents. On the other hand, teenagers and adolescents may demand more of parents in a psychological way. A probable other aspect of parenthood is the age at which the transition into parenthood took place. In particular, women who gave birth to their first child at a relatively older age may have had more possibilities to develop a professional career compared to younger mothers (Blossfeld & Huinink, 1991) and may therefore be in a more favourable position than younger mothers.

In addition to an effect of a certain social role, the combination of social roles may have an influence on mental health. According to the role accumulation theory, having more social roles may be associated with better mental health among both genders. An adequate combination of more social roles may provide energy (Sieber, 1974; Nordenmark, 2002) and having more social roles provides possibilities to compensate negative experiences in one role by better experiences in other roles (Thoits, 1983). On the other hand, according to the role-strain theory, some combinations of social roles may be particularly stressful, such as being a working parent without support from a partner (Cairney et al., 2003).

In this paper, data of NEMESIS (Netherlands Mental Health Survey and Incidence Study) will be used to describe the associations of work and family roles with depression and anxiety disorders among men and women in the age of 25 through 55 years. With this study, associations of social roles (employee, partner, and parent) and role characteristics with the presence of depression and anxiety disorders will be explored, and it will examine to what extent social roles contribute to the explanation of gender differences in the prevalence of these disorders. Studies that examine (gender differences in) associations of social roles with diagnoses of depressive and anxiety disorders measured by the CIDI interview (Robins et al., 1988) in a large community sample are scarce. The first hypothesis of this study is that all three social roles will be positively associated to better mental health, but stronger among men compared to women. The second hypothesis is that having more social roles is better for one's mental health, but particular role combinations, such as being a parent without a

partner, are disadvantageous for the mental health. Finally, we hypothesize that gender differences in the association of social roles with mental health can contribute to the explanation of the female preponderance of depression and anxiety disorders.

Method

Research population

The Netherlands Mental Health Survey and Incidence Study (NEMESIS) is an epidemiological study in the Dutch general population to determine the prevalence of psychiatric disorders. A representative sample of adults, aged 18-64 years, was interviewed by intensively trained and monitored interviewers in 1996 (n=7076), (Bijl et al., 1998). Psychiatric disorders were measured using a computerized version of the Composite International Diagnostic Interview (CIDI, version 1.1). The CIDI is a validated diagnostic instrument, developed by the World Health Organization (WHO), which is suitable for non-clinician interviewers (Robins et al., 1988). For this study, we explored the association of social roles (employee, partner, and parent) with the 12-month prevalence of depression and anxiety disorders. We selected people with theoretical ability to have the three roles of being a partner, a parent and having a job. Because people younger than 25 may still be students and people over 55 may be retired, we selected people in the age between 25 through 55 years (n= 5227), the age group in which the occurrence of the three social roles is most likely. We excluded all respondents (n=1219) with any psychiatric diagnosis (anxiety, depression, dysthymia, psychosis, bipolar disorder, eating disorder, or substance dependence) before the last 12 months, since we hypothesized that having a lifetime diagnosis of a psychiatric disorder could have influenced the development of social roles. For the same reason, we excluded respondents who received a social security benefit because they were declared unfit to work (n=151). The remaining 3857 persons, 1925 women and 1932 men, constitute the sample for the present study.

Depression and anxiety disorders

The dependent variable of this study was the 12-month prevalence of depression and anxiety disorders, defined and measured using DSM-III-R criteria. Depressive disorders included major depression and dysthymia; anxiety disorders included social phobia, panic disorders, simple phobia and generalized anxiety disorder. We considered all these disorders as one group, since these disorders have several shared characteristics in their origins and treatment and

co-morbidity among these disorders is high (Boyer, 2000; Himmelhoch et al., 2001; Levine et al., 2001).

Work-role variables

The variable work (1= paid work, 0= no paid work) was constructed based on a question about one's current sources of income with 12 categories. The four categories 'paid work', 'part-time job', 'temporary work or short-term sick leave' or 'household and part-time work' were recoded 'working'. All other categories, such as 'looking for work', 'studying', 'voluntary work' and 'household' were recoded 'not working'. In line with previous analyses (Plaisier et. al, 2007), we recoded persons who reported to work less than 8 hours a week as not working. Based on the question 'In the last four weeks, how many hours a week have you been working on average?' a variable ´amount of working hours' was created with three categories: 1 = 0 through 7 hours (not working); 2 = 8 through 35 hours (part-time job); 3 = 36 hours or more a week (full-time job). These categories were based on Dutch standards, which consider 36 hours a week as full-time work.

Family-role variables

The partner-role was defined by a dichotomized variable partner (1= living with partner, 0 = not living with partner). The parent-role was defined by 4 variables: child (1= has child; 0= has no child), child in household (1= has child in household; 0= has no child in household), the age of the respondent at which his or her first child was born, the number of children and the age group of the youngest child. The age categories of children were based on main stages in development: 1= 0 to 3 years (baby/toddler, not of school age); 2 = 4 to 11 years (primary school age); 3 = 12 to 17 years (adolescent, secondary school); 4 = 18 to 24 years (young adult, studying or working in first jobs); 5= 25 years or older (independent adult).

Social roles

Based on the dichotomous work and family variables a variable for number of social roles was constructed with a range from 0 (no roles) to 3 (all three roles). Beside this, we computed interaction terms of the combinations of social roles: (1) work and child, (2) work and partner, (3) partner and child and (4) work and partner and child.

Confounding variables

Confounding variables were age, level of education (1= low (no qualifications); 2= lower intermediate (low vocational or secondary school) ; 3= higher intermediate (intermediate vocational or high school); 4=high (high vocational or academic)) and the number of chronic

diseases. For this last variable, the number of chronic diseases for which the respondent had medical treatment was counted (up to 31 diseases, e.g. lung diseases, cardiovascular diseases, cancer, diabetes, rheumatoid arthritis, kidney or liver diseases and muscular diseases).

Statistical analyses

With independent t-tests (for continuous variables) and chi-square tests (for categorical variables), the gender differences in work and family roles, and socio-demographic variables were examined (Table 1). To address the first hypothesis, we tested the association of social roles and gender differences with the presence of a depressive or anxiety disorder in a logistic regression model, controlling for age, level of education and the number of chronic diseases (Table 2). Odds ratios and the 95% confidence intervals were calculated for men and women separately. The associations of social role combinations with present anxiety and depressive disorders (second hypothesis) were tested in a controlled model with the individual social roles, by adding the interaction term between these social roles (Table 3). We tested whether associations between social roles and depression and anxiety were different for men and women by testing gender and social role interaction terms in adjusted logistic models. These interactions were tested at a significance level of 95% ($p<0.05$). To explore whether social roles contribute to the female preponderance in depression and anxiety disorders, the reduction of the OR of gender for the prevalence of depression and anxiety disorders was calculated after adding work and family variables into the adjusted logistic model (Table 4). Reductions of more than 10% were considered as indications of an essential change in risk. For this study, SPSS 11.0 was used to perform the analyses.

Results

Sample description

Table 1 shows a significantly higher 12-month prevalence of depression and anxiety disorders in women (16.3%) than in men (8.8%, $\chi^2 = 48.99$, $p<0.001$). In this sample, 483 persons had an anxiety or depressive disorder from whom 242 (50%) had a prevalent anxiety disorder, 136 persons (28 %) had a prevalent depressive disorder and 105 persons (22%) had both. Men were higher educated and had fewer chronic diseases. The proportion of men and women living with a partner did not differ. Women were more likely to be a parent, had more children, and were younger when they became parent. The most pronounced differences between men and women occurred in work-roles. More men than women had a paid job, and men worked

Table 1. The prevalence of depression and anxiety disorders, socio-demographic variables and work and family roles among men and women aged 25 through 55 years

	Total N= 3857	Men N=1932	Women N= 1925	Gender difference (p-value)
12-month prevalence of depression and anxiety disorders (%)	12.5	8.8	16.3	<0.001
Socio demographic variables:				
Age	38.8 (± 8.31)	38.9 (± 8.21)	38.7 (± 8.42)	0.49
Level of education (%):				<0.001
Low	3.8	3.4	4.2	
Lower intermediate	36.8	31.0	42.5	
Higher intermediate	29.1	30.3	27.8	
High	30.4	35.2	25.5	
Number of physical illnesses	0.70 (± 0.99)	0.54 (± 0.84)	0.87 (± 1.11)	<0.001
Family roles:				
Partner (% yes)	77.1	76.4	77.9	0.28
Children (% yes)	68.3	63.5	73.2	<0.001
Children in household (% yes)	56.4	51.7	61.1	<0.001
Number of children (%):				<0.001
0	31.7	36.5	26.8	
1 – 2	48.6	43.8	53.4	
≥ 3	19.8	19.7	19.8	
Age at birth first child (n = 2534)	26.9 (± 4.5)	28.2 (± 4.5)	25.9 (± 4.2)	<0.001
Age group youngest child (%, n = 2634):				0.01
0 – 3	25.9	26.6	25.3	
4 – 11	32.0	34.2	30.1	
12 – 17	17.2	17.1	17.3	
18 – 24	17.4	16.7	18.0	
≥ 25	7.4	5.3	9.3	
Work-role:				
Work (% yes)	80.8	95.0	66.5	<0.001
Hours of work per week (%):				<0.001
Not working (< 8 hours)	19.2	5.0	33.5	
8 – 35	26.2	8.3	44.2	
≥ 36	54.6	86.7	22.4	
Role combinations :				
Combinations of work, child, partner (%):				<0.001
Not working, no child, no partner	1.8	2.3	1.2	
Not working, no child, has partner	1.1	0.7	1.6	
Not working, has child, no partner	2.9	0.5	5.4	
Not working, has child, has partner	15.6	1.7	29.5	
Working, no child, no partner	13.7	16.4	11.0	
Working, no child, has partner	15.1	17.1	13.0	
Working, has child, no partner	4.5	4.5	4.6	
Working, has child, has partner	45.3	56.9	33.7	
Number of social roles (work, child, partner %):				<0.001
0 roles	1.8	2.3	1.2	
1 role	17.7	17.5	18.0	
2 roles	35.2	23.3	47.1	
3 roles	45.3	56.9	33.7	

more hours a week compared to women. There were also differences between men and women in their combinations of social roles.

Though the majority of both men and women combined work with parenthood and partnership, among women the combination of partner and parenthood without a paid job was also common. The number of social roles differed between men and women; more men than women had three social roles (56.9 % against 33.7 %) and women occupied more frequently two roles (47.1 % against 23.3 % among men).

Table 2. The adjusted association between work and family roles and the prevalence of depression and anxiety disorders among men and women aged 25 through 55 years [a]

	Men OR (95% CI)	p-value	Women OR (95% CI)	p-value	gender interaction (p-value)
Family Roles:					
Partner (0 = no, 1= yes)	0.63 (0.44 – 0.90)	0.01	0.45 (0.35 – 0.60)	<0.001	0.13
Children (0 = no, 1= yes)	0.75 (0.51 – 1.09)	0.13	0.99 (0.73 – 1.36)	0.96	0.56
Children in household (0 = no, 1 = yes)	0.87 (0.62 – 1.20)	0.38	1.07 (0.83 – 1.38)	0.61	0.37
Number of children:		0.05		0.25	0.06
0	Reference group		Reference group		
1 – 2	0.84 (0.57 – 1.24)	0.38	0.93 (0.68 – 1.29)	0.68	
≥ 3	0.52 (0.30 – 0.88)	0.02	1.22 (0.82 – 1.81)	0.31	
Age at birth first child	1.03 (0.98 – 1.08)	0.22	1.01 (0.98 – 1.05)	0.48	0.40
Age group youngest child:		0.37		0.32	0.62
0 – 3	0.62 (0.17 – 2.21)	0.46	1.59 (0.63 – 3.99)	0.33	
4 – 11	1.15 (0.39 – 3.34)	0.81	1.97 (0.93 – 4.21)	0.08	
12 – 17	1.08 (0.39 – 2.98)	0.89	1.67 (0.87 – 3.23)	0.13	
18 – 24	0.89 (0.33 – 2.40)	0.82	1.56 (0.85 – 2.87)	0.15	
Work-role:					
Work	0.40 (0.24 – 0.69)	0.001	0.86 (0.66 – 1.12)	0.23	0.02
Hours of work a week:		<0.001		0.36	0.05
< 8 hours	Reference group		Reference group		
8 – 35 hours	0.86 (0.43 – 1.73)	0.69	0.94 (0.71 – 1.25)	0.67	
≥ 36 hours	0.39 (0.22– 0.69)	0.001	0.77 (0.53 – 1.11)	0.16	

[a] Adjusted for age, level of education and number of chronic diseases.

Social roles and the association with depression and anxiety disorders

Table 2 presents the odds ratios for depression and anxiety disorders associated with social roles, after adjustment for age, level of education and diseases. Living with a partner was associated to a decreased odds ratio of depression and anxiety disorders consistently for both men and women. Having children was not associated with the depression and anxiety disorders, nor has the respondent's age at birth of the first child or the age group of the youngest child. None of the gender interaction terms of these parent-role variables, added into the adjusted model, was significant. The number of children was only significant among men. Having three children or more seemed to decrease the risk of a prevalent depressive

and anxiety disorder (OR = 0.52, 95% CI: 0.98 – 1.08, p=0.02). In contrast, among women the OR of depressive and anxiety disorder associated with having three children or more was 1.22 (0.82 – 1.81, p=0.48). The p value of the gender interaction of number of children added into the adjusted model was low, but not significant (p= 0.06). A more pronounced gender difference was found for the work-role variables. Having a job was a strong protective factor of the presence of depressive and anxiety disorders for men, but not for women. This gender difference was supported by the fact that the interaction term for gender was significant (p = 0.02). A gender difference was also significant for the hours of work per week (p = 0.046). Particularly full-time work was associated with a better mental health among men (OR = 0.39, 95% CI: 0.22 – 0.69, p = 0.001). Although the associations of work and hours of work a week with anxiety and depressive disorders among women were in the same direction, these associations were not significant.

Role combinations and the association with depression and anxiety disorders

Table 3 presents the associations of social role combinations with the prevalence of depression and anxiety among men and women separately. After adjustment for age, level of education and number of chronic diseases, having more social roles was associated with a decreased prevalence of depression and anxiety disorders among both men and women. Adding the three individual roles of work and family (being a partner and being a parent) into this adjusted model outweighed the effect of the multiple social roles variable, indicating that the effect of having more social roles does not have a supplementary effect beside direct effects of the individual social roles (specific results not shown). Nevertheless, we found some gender differences in the effect of particular combinations of social roles. The interaction term of work and child added into the adjusted model with the individual variables was significant among women (p = 0.001), but not among men (p = 0.45). This indicates that the combination of the work-role with parenthood was associated to the presence of anxiety or depression disorders among women, but not among men. The OR of depression and anxiety disorders for having a job was 0.28 (95%CI: 0.14 – 0.54, p<0.001) among women without children and 1.01 (95% CI: 0.75 – 1.35, p= 0.95) among women with children. The protective effect of the work-role seems only significant among women without children. For men, the protective effect of the work-role was significant whether they had a child or not. We also found a significant interaction effect for the combination of the partner-role with the parent-role among women (p =0.02), which was not significant among men (p = 0.86). For women, the partner-role was more strongly associated with the presence of depression and anxiety disorders among those with children compared to those without children. The OR of anxiety and depression associated with having no partner was 3.04 (95%

CI: 2.15 – 4.32, p=0.001) among women with children and 1.71 (95% CI: 1.02 – 2.86. p=0.04) among women without children. No significant interaction effects for the combination of the work and partner-roles were found, nor for the combination of the three roles (all p values >.05).

Because of the observed gender difference in the combination of the work role with the parent role, we also examined the interaction of hours or work with parenthood among men and women separately (results not shown). Among men this interaction term was not significant (p = 0.68) but it was significant among women (p = 0.005). For women without children, the ORs were 0.71 (95% CI: 0.30 – 01.81, p =0.47) for part-time jobs and 0.34 (95% CI: 0.16 – 0.71, p =0.004) for full-time work compared to women working less than 8 hours. Among women with children the ORs were respectively 1.23 (95% CI: 0.42 – 3.61, p = 0.72) for part-time jobs, and 0.54 (95% CI: 0.21 – 1.36, p = 0.19) for full-time work. We did not observe differences between women working less than 16 hours or 17 to 35 hours a week (results not presented). This indicates that working more hours is advantageous for both men's and women's mental health, but having children mitigates this effect among women.

Table 3. The adjusted association between role combinations and the prevalence of depression and anxiety disorders among men and women aged 25 through 55 years [a]

	Men		Women	
Role combinations:	OR (95% CI)	p-value	OR (95% CI)	p-value
Number of social roles:		0.01		<0.001
0 roles	Reference group		Reference group	
1 role	0.50 (0.22 – 1.14)	0.10	0.44 (0.18 – 1.11)	0.08
2 roles	0.36 (0.16 – 0.81)	0.01	0.29 (0.12 – 0.70)	0.01
3 roles	0.30 (0.14 – 0.67)	0.001	0.23 (0.09 – 0.58)	0.001
Work * Partner	1.18 (0.39 – 3.61)	0.78	1.11 (0.63 – 1.95	0.72
Work * Child	1.49 (0.49 – 4.56)	0.48	3.15 (1.56 – 6.37)	0.001[b]
Partner * Child	0.84 (0.37 – 1.92)	0.86	0.50 (0.27 – 0.90)	0.02 [c]
Work * Partner * Child	4.19 (0.34 – 52.2)	0.27	0.64 (0.15 – 2.75)	0.54

[a] Adjusted for age, level of education, number of chronic diseases, and also individual roles in analyses examining interaction effects.
[b] Among women without children the OR of work = 0.28 (95%CI: 0.14 – 0.54, p<0.001), among women with children the OR of work = 1.01 (95% CI: 0.75 – 1.35, p= 0.95).
[c] Among women without children the OR of having *no* partner = 1.71 (95% CI: 1.02 – 2.86. p=0.04), among women with children the OR of having *no* partner = 3.04 (95% CI: 2.15 – 4.32, p=0.001).

The explanation of gender differences in the prevalence of depressive and anxiety disorders

Women were more likely to have depressive and anxiety disorders than men: the OR for women compared to men was 1.71 (95% CI: 1.40 – 2.10, p<0.001) adjusted for age, level of education and the number of chronic diseases. Table 4 shows changes in the OR for the prevalence of depression and anxiety disorders by gender, after adding various social role

variables into the model. Adding work status changed the OR of gender from 1.71 to 1.56, a reduction of (1.71 - 1.56) / (1.71 - 1) * 100 = 21.1 %. The largest reduction (64.8 %) of the OR occurred when hours of work was added into the model. The OR of gender decreased to 1.25 (95% CI: 0.96 – 1.63, p = 0.11) and was no longer significant. The partner and parent-role variables did not reduce the odds ratio of gender. The interaction term of work and partner also reduced the OR of gender considerably with 14.1 %, but this was not more than the reduction caused by the individual work-role variable (21.1 %). The three-way interaction-term work, child and partner reduced the OR of gender not more (11.3 %) than the individual work-role variable, indicating that the main reducing effect was that of the work-role variable. On the other hand, family-roles seem to mitigate the reducing effect of the work-role on the OR of gender, illustrated by lower percentages of gender OR reductions by respectively the partner and work role interaction (14.1 %) and the parent and work-role interaction (5.6%) compared to the contribution in the gender OR reduction by the work –role individually (21.1 %).

Table 4. The contribution of work and family roles to the gender difference in the prevalence of depression and anxiety disorders among men and women aged 25 through 55 years [a].

	Odds Ratio (95% CI)	p-value	Reduction in gender OR
Gender difference	1.71 (1.40 – 2.10)	<0.001	
Gender difference adjusted for:			
Partner (0=no, 1= yes)	1.74 (1.42 – 2.14)	<0.001	0 %
Child (0=no, 1= yes)	1.73 (1.41 – 2.13)	<0.001	0 %
Work (0 = no, 1 = yes)	1.56 (1.25 – 1.94)	<0.001	21.1 %
Hours of work a week	1.25 (0.96 – 1.63)	0.10	64.8 %
Number of social roles	1.69 (1.37 – 2.09)	<0.001	2.8 %
Partner * Child	1.62 (1.32 – 1.99)	<0.001	12.7 %
Partner * Work	1.61 (1.29 – 2.01)	<0.001	14.1 %
Work * Child	1.67 (1.34 – 2.09)	<0.001	5.6 %
Work * Partner * Child	1.63 (1.30 – 2.04)	<0.001	11.3 %

[a] Adjusted for age, level of education and number of chronic diseases. When examining interaction effects, also individual roles were included.

Conclusion

The present study examined the associations of work and family roles with the prevalence of depression and anxiety disorders, and whether these social roles could explain the female preponderance in the prevalence of depression and anxiety disorders. Concerning their mental health, we expected that men may profit more from certain social roles than women.

This was particularly supported by the results regarding the work-role. Both having a job and working fulltime were associated with a lower prevalence of depression and anxiety disorders among men, but not among women, supported by significant gender interaction terms. The results showed that the associations of the partner-role and the parent-role with anxiety and depressive disorders were consistent for men and women. Concerning these family roles, we may conclude that for both genders, the partner-role was a strong protective factor for mental health, but the parent-role had not such a pronounced effect.

We found two significant associations of role combinations with anxiety and depressive disorders among women. First, an increased prevalence of depression and anxiety was found among women with children but without a partner. Secondly, the effect of the work-role was positive for women's mental health when they had no children, but not among those with children. Both men and women had a better mental health when they had more social roles. However, this effect was mainly caused by the individual association of social roles with anxiety and depression, particularly the partner-role and work-role and not by a role accumulation effect, since the interaction term of the three roles was not significant. This is not in line with some other cross-sectional studies that found support for a role accumulation effect (Sachs-Ericsson & Ciarlo, 2000; Thoits, 1983). However, it is suggested that in cross-sectional studies this result may be the effect of selection: most healthy people are able to combine work and family roles (eg. Fokkema, 2002; Martikainen, 1995). In this study, we tried to minimise the effect of selection by excluding people with increased risks of prevalent depression or anxiety disorders due to their physical or mental health and adjusting the models for the number of chronic diseases. We found a significant difference in the social roles occupied in the unselected group (of the same age category of 25 to 55 years) compared to the selected sample ($\chi^2 = 175.09$, df = 3 , $p < 0.001$). In the unselected group 6.1 % had no social roles and 30.0 % had all three roles, compared to respectively 1.7% and 47.3% in the selected sample, which justifies the used selection procedure. The question whether accumulation of social roles increases or decreases the risk of depression and anxiety disorders over time merits further longitudinal investigation of the social role hypotheses (role accumulation hypothesis versus role strain hypothesis) in the relationship with incidences of depression and anxiety disorders, in order to better disentangle the causal trajectory.

A pronounced result is the contribution of work, and particularly the amount of work hours, to the explanation of the gender difference in the prevalence of depression and anxiety disorders. The hours of work were associated to the prevalence of depression and anxiety disorders among men, but not among women. Full-time work had a strong advantage for men concerning their mental health, and having no job or a part-time job was strongly

associated to poor mental health conditions among men, but not implicitly among women. Nevertheless, the majority of men were working fulltime, which appeared to contribute to the explanation of their lower prevalence of depression and anxiety compared to women. Our results showed that working women had a better mental health compared to women without jobs, unless they had children. On one hand, time pressure among working women with children may cause stress and result in a higher prevalence of anxiety and depression. On the other hand, many (Dutch) women start to work in part-time jobs when they become mothers, resulting in lower career expectations and probably decreased quality of the working conditions. According to a study initiated by the European Union, working conditions are usually better among men compared to women (Fagan & Burchell, 2002).The association between unfavourable working conditions and symptoms of depression and anxiety has been demonstrated (Karasek & Theorell, 1990; Andrea et al., 2004; Schaufeli & Buunk, 2005; Sanne et al., 2005), and is equal for men and women (e.g. Loscocco & Spitze, 1990; Pugliesi, 1999; Plaisier et al., 2007). Moreover, particularly the psychological demands of a job are associated to an increased risk of depression and anxiety disorders (Jonge & Kompier, 1997; Stansfeld et al., 1999; Demerouti et al., 2001; Sanne et al., 2005; Plaisier et. al, 2007). Working conditions, such as psychological demands, job insecurity and decision latitude did not contribute to the explanation of the female preponderance in depression and anxiety disorders (Plaisier et al., 2007). This may indicate that not so much gender differences in the quality of work itself, but more likely gender differences in social meaning of the work-role have a part in the different effects of the work-role among men and women. The work-role may also play a part in identity and self esteem. In a qualitative study by Simon (1995), support was found for the idea that the meaning of social role occupancy differs for men and women and may contribute to gender differences in well-being. For example, having a job had positive consequences for men's self-image, but was associated to feelings of guilt among working mothers. Therefore, women may profit less than men from non-economic benefits of the worker-role, such as self-esteem and self-realization. On the other hand, in this present study, the role of homemaker seemed to be advantageous for women's mental health neither, probably because the homemaker role carries frustrating elements too, and has been increasingly devaluated in last decennia.

A limitation of our study is that we examined associations of social roles with anxiety and depressive disorders but we do not have insight into the quality nor the meaning of social roles. As discussed above, gender differences in the meaning and quality of social roles may be crucial in the explanation why (combinations of) social roles are associated to mental health among men and women in different ways. Women may be more prone to experiencing work-family and family-work interference, but we were not able to reveal these

effects in this study. In addition, because of power issues, we did not discriminate between anxiety and depression disorders. However, our further explorations for anxiety disorders and depression disorders separately showed consistent results for both outcomes, suggesting that social roles are similarly related to these two groups of disorders.

A unique aspect of this study is the opportunity to study (gender differences in) associations of social roles among men and women in a large sample of the general population with diagnosed depression and anxiety disorders, according to worldwide used DSM-III-R criteria.

Further investigation of work characteristics and the meaning of the work-role in combination with (the quality of) family roles is useful and could possibly contribute to the explanation of gender differences in mental health. This research may contribute to our theoretical understanding, as well as give us more insight into pathways for prevention of depression and anxiety disorders. The work-role itself, as well as the combination of work with the parent-role is a matter of concern for women's mental health. Three guidelines seem to be important for prevention, as well in terms of policy as in individual treatments. The first one should be reducing time pressure resulting from the combination of the work role and the parent role, for example by good childcare arrangements. Secondly, attention should be paid to devaluated career perspectives when women start working in part-time jobs, which subsequently may result in lower quality of the work-role and decreased possibilities for self-realization. Finally, to reduce differences in the consequences of role combination, the meaning of the work-role and the parent-role for men and women may be a focus in the discussion about combinations of work and parenthood.

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CHAPTER 3

THE EFFECT OF SOCIAL ROLES ON MENTAL HEALTH: A MATTER OF QUANTITY OR QUALITY?

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Abstract

The effect of social roles (partner, parent, worker) on mental health may depend on the total number or the quality of the individual occupied social roles. With longitudinal data from the Netherlands Mental Health Survey and Incidence Study (NEMESIS), the effect of the number and quality of occupied social roles on mental health over three years was examined among 2471 men and women aged 25-55 years without mental disorders at baseline. Mental health was assessed using 3-year change in the SF-36 mental health scale as well as using the 3-year incidence of anxiety and depressive disorders defined by DSM-III criteria. The quality of social roles was assessed by the GQSB (Groningen Questionnaire Social Behaviour). The number of social roles had no significant effect on the risk of developing depressive and anxiety disorders, but particularly the partner-role had a significant positive effect on mental health (β of mental health=1.19, p=0.01; HR of incident disorders=0.75, 95% CI:0.51–1.00, p=0.05). A good quality of each of the three social roles was associated with higher levels of mental health and lower risks of incident disorders over 3 years. More than the number of social roles, knowledge about social role quality might provide opportunities for prevention of depressive and anxiety disorders.

The effect of social roles on mental health: A matter of quantity or quality?

Introduction

Being a worker, a parent and a partner are three main social roles that men and women in modern societies may combine during their midlife. However, there are conflicting theories whether occupying multiple roles can cause or prevent mental health problems, and it is still unclear whether this depends on the quality of the individual social roles.

According to the role strain theory, occupying multiple social roles can be a source of stress due to scarcity of time and energy, and may have mainly unfavourable mental and subjective health outcomes (Barnett, 1985). Only partial support for the role strain theory was found (Weich et al., 1998) and particularly concerning the work and parent-role combination (Frone, 2003; Wang, 2006). In contrast with the role strain theory, the role enhancement theory suggests that occupying multiple roles provides opportunities for positive health outcomes. Occupying multiple roles may offer role privileges, resources for status enhancement, and enrichment of the personality (Sieber, 1974), human energy (Marks, 1977), social support, opportunities to experience success and added income (Barnett & Hyde, 2001). Most studies that found evidence for positive effects of social roles on mental health were conducted with cross-sectional data (e.g. Aneshensel et al., 1981; Sachs-Ericsson & Ciarlo, 2000; Plaisier et al., 2007b) and were often restricted to women (e.g. Barnett et al., 1992; Lahelma et al., 2002; Lee & Powers, 2002; Matthews & Power, 2002; McDonough et al., 2002; MacLean et al., 2004). Because depressive and anxiety disorders may also cause role impairment (Maier et al., 1999; Kessler et al., 2003), it is difficult to draw conclusions in the direction of causality in cross-sectional studies. Longitudinal studies that examined the role enhancement effect on mental health are scarce. In a recent study by McMunn et al. (2006) among a cohort of women, support was found for the role enhancement theory concerning general health. In another longitudinal study, support was found for the role enhancement theory on general health among women but not among men (Janzen & Muhajarine, 2003). Rozario et al. (2004) found support for the role-enhancement theory in their study among older caregivers; men and women who occupied multiple roles (employee, volunteer) reported better mental health. In a longitudinal study among women by Waldron et al. (1998), being married had a more beneficial effect on general health among unemployed women than among employed women. Vice versa, employment was especially beneficial

among unmarried women and may suggest that the positive effects of the partner and work-role can substitute for each other. Therefore, besides the quantity of social roles, also specific combinations of social roles may have a part in the effect of occupying multiple roles on mental health.

The beneficial effect of occupying multiple social roles may also depend on specific role characteristics, such as the psychosocial content or quality of social roles (Waldron et al., 1998; Chandola et al., 2004; Weich et al., 1998; Janzen & Muhajarine, 2003; Simon, 1995). The effect of the quality of the partner and parent-role on mental health has been well-described (e.g. Wade & Kendler, 2000; Overbeek et al., 2006; Helbig et al., 2006; Evenson & Simon, 2005), as well as the effect of the quality of the work-role (e.g. Harnois & Gabriel, 2000; Karasek & Theorell, 1990; Demerouti et al., 2001; Stansfeld et al., 1999; Plaisier et al., 2007a). In a longitudinal study by Barnett et al.(1992), low quality of the work-role was associated with deterioration of mental health, but not among partnered women and women with children. As far as we know, no study so far examined the association of both role occupancy as well as the quality of social roles on the incidence of anxiety and depressive disorders among men and women.

In this present population-based study, we aim to examine the longitudinal associations of social roles and the quality of these social roles on two outcomes: a general indicator of mental health, as well as diagnoses of depressive and anxiety disorders as determined by psychiatric interviews, using 3-year longitudinal data of NEMESIS (Netherlands Mental Health Survey and Incidence Study). We will examine whether the quantity of occupied social roles is related with mental health over 3 years among both men and women without lifetime psychiatric diagnoses at baseline. Secondly, we will examine the role of the quality of social roles on 3-year mental health outcomes and will explore whether unfavourable effects of poor social role quality can be buffered by experiences in another social role.

Methods

Research population

NEMESIS is an epidemiological study in the Dutch general population to determine the prevalence, incidence and course of psychiatric disorders with waves in 1996, 1997 and 1999 (Bijl et al., 1997). A representative sample of 7076 adults, aged 18-64 years, was interviewed with the Composite International Diagnostic Interview (CIDI, Robins et al., 1988a), designed to assess mental disorders according to the Diagnostic and Statistical Manual of mental

disorders, (DSM-III-R). We selected people with theoretical ability to be a partner, a parent and having a job. Because people younger than 25 years may still be students and people over 55 years may be retired, we selected people in the age of 25 through 55 (n=5227). We excluded 2327 respondents with a lifetime diagnosis of any psychiatric disorder at baseline, since we aimed to examine first-time incidence of anxiety and depressive disorders. From the 2898 healthy respondents at the first wave, 2448 (84.5%) were re-interviewed at the second wave and 2156 (74.4%) were re-interviewed at the third wave. 2471 (82.1%) respondents (1166 men, 1305 women) were re-interviewed at least one time (second and/or third wave), and constitute the sample for the present study. Non-response was not associated with the number of occupied roles (χ^2=5.95, p=0.11).

Mental health

For this study we used both diagnoses of anxiety and depressive disorders as well as a general indicator of mental health over 3 years as outcome variables. With the combination of these two outcome variables we are able to observe subtle changes in mental health at the level of symptoms (SF-36 mental health scale) as well as whether these changes are clinically relevant and correspond with incidence of disorders. The prevalence (at baseline) and incidence (during the follow-up assessments) of diagnosed depressive and anxiety disorders after either one or three years were defined by DSM-III criteria and measured using the CIDI interview (Robins et al., 1988b). Depressive disorders included major depression, dysthymia (van Duin, 2007) and minor depression; anxiety disorders included simple phobia, social phobia, panic disorders, agoraphobia and generalized anxiety disorders. We considered all these disorders as one group, since these disorders have largely shared sociological characteristics (Plaisier et al., 2007a) and co-morbidity among these disorders is high (Bijl et al., 1998; Boyer, 2000; Himmelhoch et al., 2001; Levine et al., 2001).

The general indicator for mental health was measured at baseline and the two follow-ups (after 1 and 3 years) using a 5-item scale of the SF-36, which measures symptoms of anxiety and depression and psychological well-being (Stewart et al., 1988; Ware, Jr. & Sherbourne, 1992). A high score on this scale means a good mental health. Cronbach's Alpha of this scale was 0.83 at baseline.

Social roles

Social roles were defined by the status of the partner-role, the parent-role and the work-role at baseline, in line with our previous, cross-sectional study on social roles and mental health (Plaisier et al, 2007a). Partner-role was defined by a dichotomized variable that classifies all persons living with a partner, cohabiting or married, as being a partner. The parent-role was

defined by 3 variables: being a parent (1=yes; 0=no), the number of children (1=0 children, 1=1 or 2 children (small family), 3=3 or more children (large family)) and the age of the youngest child (based on main stages in development: 1=0 to 3 years (baby/toddler); 2=4 to 11 years (primary school age); 3=12 to 17 years (adolescent, secondary school); 4=18 years or older (young adult)).

The variable work (0=no paid work, 1=paid work) was constructed based on a question about one's current sources of income. In line with previous analyses (Plaisier et al., 2007a; Plaisier et al., 2007b), we classified persons who reported to work less than 8 hours a week as not working. In addition, a variable 'amount of working hours' was created with three categories: 1=0 through 7 hours (not working) ; 2=8 through 35 hours (part-time job); 3=36 hours or more a week (full-time job). These categories were based on Dutch standards, which consider 36 hours a week as full-time work.

Based on the dichotomous social variables at the first wave, a variable for number of social roles was constructed ranging from 0 (no roles) to 3 (all three roles). Beside this, we computed interaction terms of the combinations of social roles at the first wave: (1) work and child, (2) work and partner and (3) partner and child.

The quality of social roles

The quality of the partner-role, the parent-role and the work-role was assessed by scales of the GQSB (Groningen Questionnaire Social Behavior, de Jong & van der Lubbe, 1994), which assesses social functioning in several (social role) areas. Items of these scales had four response options, ranging from 1 (never) to 4 (always). Negative items were recoded and total sum scores were computed with a range from 0 to 1; the lower the score, the poorer was the functioning in that social role. Subsequently, each scale of the quality of social roles was recoded into three categories (tertiles), representing low, medium or high quality. The partner-role quality scale included 12 items, such as 'my partner and I did many things together' and 'I have avoided my partner lately'. Cronbach's Alpha for this scale was 0.80. The quality of the parent role was defined by two scales of the GQSB, a scale specific for children under 15 years old (7 items, such as 'I am well-informed about my children's activities (with friends, in school)' and 'I avoid one or more of my children lately', Cronbach's Alpha 0.60), and a scale specific for children 15 years or older (6 items, such as 'I am well-informed about my children' activities (with friends, school, work), 'I am well-informed about the problems of my children', Cronbach's Alpha 0.69). When respondents had both children under 15 years and older children, the scores (with a range from 0 to 1) were added up and divided by two. The quality of the work-role was assessed by a 7-item scale of the GQSB, with items such as 'I

can manage to get my work done in time', and 'Others have to do my work because I can not cope with it'.

Covariates

Potential confounding variables are age, sex, level of education (1=low; 2=lower intermediate; 3=higher intermediate; 4=high) and the number of chronic diseases at baseline. For the latter, the number of chronic diseases for which the respondent had medical treatment was counted (up to 31 diseases, e.g. lung diseases, cardiovascular diseases, cancer, diabetes, arthritis, kidney or liver diseases and muscular diseases). In addition, baseline SF-36 mental health scores were added in regression models using SF-36 mental health at follow-up assessment as outcome variable.

Statistical analyses

With t-tests (for continuous variables) and chi-square tests (for categorical variables), the gender differences in partner, parent and work-roles, and socio-demographic variables at the first wave were examined. Using SPSS 15.0, we tested the associations of social roles and the quality of social roles with the risk of developing a depressive or anxiety disorder over 3 years in Cox-survival analysis, controlling for age, sex, level of education and the number of chronic diseases. The variable time to first event used for the Cox regression was constructed by computing the time (in days) between the first interview and the incidence of a depressive or anxiety disorder. Persons who did not develop a depressive or anxiety disorder were censored at the time of their last interview. Relative risks and the 95% confidence intervals were calculated. We tested associations of baseline social roles with 3-year trajectory of SF-36 mental health, using generalized estimating equation (GEE) regression models controlling for baseline SF-36 mental health, age, sex, level of education and the number of chronic diseases. The effects of social role combinations were tested in controlled Cox regression and GEE models with the individual social roles, by adding the interaction term between these social roles. Buffering effects of the quality in one role with the quality in another role were tested in controlled models with the individual role quality variables, by adding interaction terms of quality of social role variables. Because previous research revealed a gender difference in the (cross-sectional) associations of social roles with mental health (Plaisier et al., 2007b), we examined whether associations between (the quality of) social roles and mental health over 3 years or the 3-year incidence of depression and anxiety were different for men and women by testing gender and social role interaction terms in adjusted GEE and Cox-regression models.

Results

Sample description

Of the 2471 persons in our sample, 267 persons developed a 3-year anxiety or depressive disorder (160 depressive disorders, 76 anxiety disorders and 31 both disorders). Women had almost twice the incidence rates of anxiety and depressive disorders compared to men; 28.4 per 1000 person years among men and 53.5 per 1000 person years among women (χ^2=26.95; p < 0.001). On average, men had a higher education level and had fewer chronic diseases (see Table 1). More men (58.1%) than women (36.1%) occupied three social roles (partner, parent, work). Women had more often a partner and were more likely to be a parent compared to men. The majority (92.9%) of men was working, but among women more than one third (36.7%) was not working. This difference was even more pronounced in the reported working hours: among men 85.8% worked full-time, compared to only 22.1% among women. The quality of the partner-role did not differ between men and women, however men reported both a slightly lower parent-role quality as well as a lower work-role quality than women.

Social roles and mental health

In our sample, particularly the partner-role was associated with better mental health over 3 years follow-up (β=1.19, p=0.01) and a decreased risk of developing depressive and anxiety disorders (HR=0.75; 95% CI: 0.51–1.00) (see Table 2). The parent-role was associated with better mental health over time (β=0.96, p=0.02), but had no significant effect on the development of anxiety or depressive disorders. Compared to having no children, both having 1 or 2, or 3 or more children were associated with better mental health over 3 years, but not consistently with decreased risks of developing anxiety and depressive disorders. There was some effect of the age group of the youngest child. Being a parent of children in the age of 4 to 11 years seemed to be associated with reduced mental health (β=-1.08, p=0.07) and an increased risk of developing anxiety or depressive disorders (HR=1.50; 95% CI: 0.98–2.29) compared to being parents with younger children. Neither the work role nor the hours of work was associated with mental health nor the development of depressive or anxiety disorders. We did not find significant gender differences in the direct effects of these social role and role characteristics, since none of the gender*social roles or gender*role characteristics interaction terms was significant.

Compared to having no or one social role, having two or three social roles seemed to be associated with better mental health ($\beta_{2\ roles}$=1.09, p=0.04, $\beta_{3\ roles}$=1.39, p=0.01), but not with a significantly decreased risk of anxiety and depressive disorders. Beside that, adding the partner role into the model reduced the effect for numbers of social roles to non-

significance, indicating that particularly the partner role accounted for this effect (specific results not shown). Additionally, the partner-parent-work-role interaction term was not significant for SF-36 mental health (p=0.76), nor for the incidence of anxiety and depressive disorders (p=0.95). None of the combinations of social roles was associated to the incidence of depressive or anxiety disorders or SF-36 mental health, since none of the interaction terms of the other social role combinations was significant (all p-values of the interaction terms >0.10).

Table 1. Socio-demographic characteristics, partner, parent and work-role of men and women aged 25 through 55 and the 3 year incidence of depressive or anxiety disorders

	Total N=2471	Men N=1166	Women N=1305	Gender difference*
Age	39.2 (± 8.4)	39.7 (± 8.2)	38.8 (± 8.5)	0.01
Level of education (%)				<0.001
Low	2.9	2.8	2.9	
Lower intermediate	35.2	29.9	39.9	
Higher intermediate	29.8	29.5	30.0	
High	32.1	37.7	27.1	
Number of physical illnesses	0.69 (± 1.0)	0.51 (± 0.8)	0.85 (± 1.1)	<0.001
Partner (no=0; yes=1) (%)	79.9	78.0	81.5	0.03
Children (no=0; yes=1) (%)	70.0	66.2	73.3	<0.001
Number of children				<0.001
0	30.0	33.8	26.7	
1–2	49.7	44.3	54.4	
>2	20.3	21.9	18.9	
Age group youngest child (%), n=1727				0.09
0–4	25.9	24.1	26.6	
4–12	30.5	32.9	28.5	
12–18	17.9	18.7	17.2	
18 +	25.7	23.4	27.6	
Work (0=not working; 1=working) (%)	77.3	92.9	63.3	<0.001
Hours of work per week (%)				<0.001
0–7	22.7	7.1	36.7	
8–35	25.1	7.1	41.1	
36 +	52.2	85.8	22.1	
Partner role quality, n=1971 (range 0–1)	0.85 (± 0.13)	0.85 (± 0.13)	0.85 (± 0.13)	0.19
Parent role quality, n=1722 (range 0–1)	0.76 (± 0.19)	0.73 (± 0.21)	0.78 (± 0.18)	<0.001
Work role quality, n=1765 (range 0–1)	0.79 (± 0.17)	0.78 (± 0.17)	0.82 (± 0.16)	<0.001
Number of social roles (work, parent, partner):				<0.001
0	1.6	2.5	0.8	
1	16.2	16.0	16.4	
2	35.7	23.3	46.7	
3	46.5	58.1	36.1	
Incidence of depressive or anxiety disorders/1000 person years	39.9	28.4	53.5	<0.001

** based on chi-square statistics (categorical variables) and t-test analyses (continuous variables).*

Additionally, we tested the effect of a variable 'work status partner' in three categories (non working, working part-time <30 hours a week, working fulltime) in a subgroup of 1974 respondents with a partner. We did not find an effect of the partner's work status on the risk of depressive of anxiety disorders or on SF 36 mental health, nor did we find any gender interaction effects, indicating similar effects of having a fulltime, part-time or non working partner for both men and women (all p-values >0.10, results not presented).

Table 2. The relationship between baseline partner, parent and work-role and the change in mental health (β and p-value) and the risk (HR*, 95% CI) of developing depressive and anxiety disorders over 3 years

	Psychological well-being over 3 years*		Incidence of depressive and anxiety disorders over 3 years	
Social Role Variables	Beta	p-value	HR (95% CI)	p-value
Partner Role:				
Partner (no=0; yes=1)	1.19	0.01	0.75 (0.51–1.00)	0.05
Parent Role:				
Children (no=0; yes=1)	0.96	0.02	1.09 (0.81–1.46)	0.58
Number of children:				
0	Reference group		Reference group	
1 - 2	0.93	0.03	1.12 (0.83–1.50)	0.48
> 2	1.05	0.05	0.99 (0.66–1.47)	0.95
Age group youngest child (n=1727):				
0–3	Reference group		Reference group	
4–11	-1.08	0.07	1.50 (0.98–2.29)	0.06
12–17	-1.05	0.20	1.99 (1.09–3.64)	0.03
18 +	0.40	0.67	1.51 (0.71–3.23)	0.29
Work Role:				
Work (0=no work; 1=work)	-0.24	0.61	0.96 (0.71–1.28)	0.77
Hours of work a week:				
0 - 7	Reference group		Reference group	
8 - 35	-0.75	0.15	0.98 (0.71–1.36)	0.91
36 +	0.41	0.46	0.88 (0.61–1.27)	0.50
Role Combinations:				
Number of social roles :				
0 or 1	Reference group		Reference group	
2	1.09	0.04	0.79 (0.57–1.01)	0.16
3	1.39	0.01	0.83 (0.60–1.15)	0.26
Partner*Parent		0.72		0.12
Partner*Work		0.50		0.15
Work*Parent		0.81		0.86
Work*Parent*Partner		0.76		0.95

**Adjusted for sex, age, level of education and number of physical illnesses*

Table 3. The baseline quality of the partner, parent and work-role and the change in mental health (β, p-value) and risk (HR*, 95% CI) of developing depressive and anxiety disorders over 3 years

Variables of the quality of partner, parent and work-role	Psychological wellbeing over 3 years*		Incidence of depressive and anxiety disorders over 3 years*	
	Beta	p-value	HR (95% CI)	p-value
Partner-role quality:				
No partner	Reference group		Reference group	
Partner, low quality	-0.36	0.49	0.99 (0.72–1.35)	0.93
Partner, medium quality	1.55	<0.01	0.72 (0.51–1.00)	0.05
Partner, high quality	3.21	<0.001	0.51 (0.34–0.76)	<0.01
Parent-role quality:				
No child	Reference group		Reference group	
Parent, low quality	-0.11	0.84	1.32 (0.91–1.91)	0.15
Parent, medium quality	1.05	0.04	1.25 (0.88–1.79)	0.22
Parent, high quality	1.48	<0.01	0.90 (0.63–1.27)	0.54
Work role quality:				
No work	Reference group		Reference group	
Work, low quality	-2.14	<0.001	1.36 (0.98–1.89)	0.09
Work, medium quality	-1.58	0.21	0.99 (0.69–1.42)	0.99
Work, high quality	1.10	0.02	0.74 (0.51–1.06)	0.10
Role quality interactionterms:				
qpartner*qparent		0.46		0.49
qpartner*qwork		0.15		0.06
qwork*qparent		0.27		0.56
qwork*qparent*qpartner		0.37		0.16

*Adjusted for sex, age, level of education and number of physical illnesses

The quality of social roles and mental health

Table 3 presents the effects of the quality of social roles on mental health over 3 years of time and the 3-year development of depressive and anxiety disorders over 3 years. Having a partner-role quality in the lowest tertile did not make a difference in mental health compared with persons without a partner. On the other hand, having a medium or high quality partner-role is favourable for one's mental health. Compared to having no partner-role, a high quality partner-role was significantly associated with better 3-year SF-36 mental health (β=3.21, p<0.001) and with a reduced incidence of anxiety or depressive disorders over 3 years (HR=0.51; 95% CI: 0.34–0.76, p<0.01). The quality of the parent role showed a less pronounced effect. Compared to having no parent-role, a medium and high quality of the parent-role was associated with better 3-year mental health (β=1.05, p=0.04 and β=1.48, p=0.002

respectively), this was not supported by significant effects on incident anxiety or depressive disorders. The work-role quality had a significant effect on mental health. Compared to non-working persons or persons with a medium work-role quality, persons who scored in the lowest tertile of work-role quality had a reduced mental health over 3 years (β= -2.14, p<0.001), an effect that was supported by a trend for an increased risk of developing depressive and anxiety disorders (HR=1.36; 95% CI: 0.98–1.89, p=0.09). In contrast, persons with a high quality of the work role had better mental health (β=1.10, p=0.02) compared to non-working persons or those with a medium quality of the work role, and in line with that they tended to have a decreased risk of developing depressive or anxiety (HR=0.74; 95% CI: 0.51–1.06, p=0.10). None of the gender*quality of social roles interaction terms were significant, indicating that the effects of the social role quality were similar for men and women.

Interaction effects of the quality of social roles

To determine whether good quality roles can buffer negative effects of poor quality roles, we examined the interaction effect of partner, parent and work-role quality. We recoded the partner and parent-role quality variables into dichotomous variables of low quality (0) and high quality (1), based on the results of Table 3. Having no partner or parent-role or a low quality partner or parent-role was recoded 0 and medium or high quality partner or parent-role was recoded 1. The work role quality was recoded into 3 categories by combining no work-role and the medium quality work-role categories, since the results showed that a high work-role quality was associated with better mental health outcomes and low work-role quality with reduced mental health outcomes whereas a medium work-role quality had no different effect on mental health compared to having no work. The results showed an interaction effect of the partner-work-role quality concerning the incidence of anxiety and depressive disorders (p=0.06), tentatively supported with results for the continuous variable mental health (p=0.15) (Table 3). Further analyses (results not presented in a table) revealed that the protective effect of a high quality partner-role on developing depressive and anxiety disorders was significant among those with a low quality work-role ($HR_{partner}$=0.38; 95% CI: 0.22–0.68, p<0.001), whereas it was not significant among persons with a high quality work-role ($HR_{partner}$=0.82; 95% CI: 0.59–1.15, p=0.26). In line with this, the strongest effect of a high quality partner-role concerning SF-36 mental health was found among persons with a low quality work-role ($\beta_{partner}$=2.53, p<0.001) and this effect was weaker (although still significant) among those with a high quality work-role ($\beta_{partner}$=1.80, p=0.01). None of the other interaction terms of the quality of social roles were significant (all p-values>0.10).

Discussion

In this study, we examined effects of social roles and role quality on the 3-year incidence of depressive and anxiety disorders and on a continuous indicator of mental health. The quality of social roles appeared to have more effect on 3-year changes in mental health than the quantity of social roles. We did not find clear support for the role enhancement theory, neither for the role strain theory. The positive effect of occupying more social roles (being a parent, partner and worker) on mental health, was particularly due to the strong positive effect of partner-role, since adding the partner-role variable into the model outweighed the effect of the number of social roles. The partner-role was the main social role that was noticeably associated with mental health. Particularly a higher quality partner-role was associated with better mental health and a decreased incidence of depressive or anxiety disorders over 3-years compared to having no or a low quality partner-role. The parent-role and work-role were not associated with mental health, but the quality of these roles was particularly associated with the general indicator of mental health. We found some indication that a high quality partner role may buffer negative effects of a low quality work-role.

We did not find a significant harmful effect of a low parent quality, however, a low quality work-role was harmful for mental health, particularly demonstrated by a change in SF-36 mental health, and supported by a trend in risks of anxiety and depressive disorders. The higher incidences of anxiety and depressive disorders among parents with children in the age group of 4 to 11 years or 12 through 17 years compared to parents with children younger than 4 years, may reflect a stressful period in nurturing school-going children. However, further analyses revealed that having children in these age groups was not significantly associated with poorer mental health compared to being non-parents. The less protective effect of the parent and work-role on mental health compared to the partner-role, may be due to a difference in the balance between costs and benefits of these roles. Beside the benefits of the parent and work-role, rearing children and having a job make an appeal on human energy and time, resulting in a rather neutral cost-benefits balance that may explain their non-significant effect on mental health. The costs-benefits balance of the partner-role seems to turn more to the benefits of this role, probably particularly due to social support from the partner.

In accordance with the theory of Barnett and Hyde (2001) we found support for the principle that the beneficial effect of social roles depends on certain conditions, particularly the quality of each. Furthermore, their idea that the beneficial effect of social roles is similar for men and women was supported in this study since we did not find gender interactions. Their principle that a beneficial effect of multiple roles might be based on the possibility of

processes such as buffering, was supported by only one indication for a possible interaction-effect, between the partner and work-role quality. The work and partner-role, may share some important resources for mental health, such as social support, added income and feelings of belonging. Therefore, the interaction effect between the work-role quality and the partner-role quality may be supportive for the substitution hypothesis (Waldron et al., 1998), that assumes that a lack of resources from one role, can be substituted by similar resources of another role.

Neither in the present longitudinal study, nor in a previous cross-sectional study on social roles and mental health in the NEMESIS population (Plaisier et al., 2007b), we found an indication for an enhancing effect (or role strain effect) of social roles. In both studies, the partner role was the main social role that was associated with better mental health. However, a difference between both studies was that in the cross-sectional study having a work-role was associated with lower risks for depressive and anxiety disorders among men and among women without children, which was not confirmed in the present study. In a cross-sectional study, the causality between mental health and social roles remains unclear, because the number of social roles occupied may be influenced by mental health. Particularly the work-role may be subject to short-time adaptive strategies when mental health problems occur, such as reducing the working hours or leaving the job, reflected in the results of the cross-sectional study. Therefore, the strict selection criteria and the longitudinal character are strengths of the present study, and reveal that over time, not the occupied work-role, but the quality of the work-role is associated with mental health, with similar effects among men and women.

A limitation of this study is that we measured the quality of social roles using a rather general questionnaire about social behaviour in social roles. It might be useful to examine more specified aspects of social role quality in future research. Particularly concerning the work-role quality there are several aspects, such as work-load, autonomy, job-insecurity, that are not measured by the GQSB.

A contribution of this study to the knowledge of the effect of social roles on mental health is that we were able to show longitudinal effects on mental health measured with a continuous scale of symptoms (SF-36 mental health) as well as with diagnoses of anxiety or depressive disorders. Using those two outcome variables revealed that not all subtle changes in SF-mental health were indeed corresponding with incidences of anxiety and depressive disorders. The main conclusion of this study is that not the quantity, but the quality of social roles is important for mental health. Particularly having a high quality partner-role seemed to be advantageous and we did not find clear evidence for substitutability of a high quality partner-role by other high quality social roles. The growing number of single, non cohabiting

adults, which trend will continue in the next decennia (van Duin, 2007; Lesthaeghe & Moors, 2000), should be a matter of concern in prevention of anxiety and depressive disorders.

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CHAPTER 4

THE CONTRIBUTION OF WORKING CONDITIONS AND SOCIAL SUPPORT TO THE ONSET OF DEPRESSIVE AND ANXIETY DISORDERS AMONG MALE AND FEMALE EMPLOYEES

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Abstract

Poor working conditions may be an important source of stress and may therefore contribute to the development of depressive and anxiety disorders. Social support may act as a buffer and protect against the development of depression or anxiety in the face of poor working conditions. With longitudinal data from the Netherlands Mental Health Survey and Incidence Study (NEMESIS), the effect of working conditions and social support on the incidence of depressive and anxiety disorders was examined among 2646 working men and women, aged 18 through 65 years. Three dimensions of self reported working conditions were assessed: psychological demands, decision latitude and job security. Social support was assessed through validated scales for daily emotional support. About 10.5% of working women and 4.6% among working men developed an incident depressive and/or anxiety disorder over 2 years. Psychological demands predicted the incidence of depressive and anxiety disorders in both men and women (RR per score increase = 2.29, 95% CI: 1.44–3.63), whereas decision latitude and job security did not. Social support protected against the incidence of depressive and anxiety disorders. This effect was stronger for men compared to women. Social support did not buffer the unfavorable mental effect of working conditions. Women were more likely to report low levels of decision latitude, whereas men reported higher psychological demands. Working conditions did not explain sex differences in the incidence of depressive and anxiety disorders.

The contribution of working conditions and social support to the onset of depressive and anxiety disorders among male and female employees

Introduction

Depressive and anxiety disorders are both common and important in the general population (Bijl et al. 1998a; Ohayon & Schatzberg 2002; Wittchen et al. 1992). Working conditions and social support represent two domains of environmental factors that may be important to understand pathways to anxiety and depression (Garnefski et al. 1990; de Graaf et al. 2002; Murphy et al. 1991; Piccinelli & Wilkinson 2000; Wilhelm et al. 2004).

Working can be disadvantageous as well as beneficial for mental health depending, among other things, on the quality of working conditions (Harnois &Gabriel 2000). The relationship between working conditions and job stress has been confirmed in cross-sectional studies (Karasek & Theorell 1990; Pugliesi 1999; Spielberger et al. 2003). One important aspect of working conditions is the security of the worker's position: uncertainty about the employment position causes stress (Siegrist 1996). According to the Demand/ Control Model (Karasek & Theorell 1990), the psychological demands imposed by the job (work load) and the degree to which the worker may exert decision latitude are two other important aspects of working conditions, which are related to job stress. The decision latitude one may exert depends on the level of autonomy and the professional skills of the worker. According to the model, rising psychological demands may cause job stress. Higher degrees of decision latitude may reduce job stress and may buffer the effect of psychological demands. In several cross-sectional studies support was found for the association of psychological demands and decision latitude with anxiety and depressive symptoms (Demerouti et al.2001; de Jonge & Kompier 1997; Sanne et al. 2005; Stansfeld et al. 1999).

Despite the fact that various studies have demonstrated an association between poor working conditions and poor mental health, Wilhelm et al. (2004) concluded in their literature review that, due to a lack of longitudinal research, the direction of the relationship between working conditions and depressive and anxiety disorders remains unclear. Poor working conditions can result in mental health problems, but mental health problems may also contribute to poor working conditions. In addition, the assessment of mental health in most previous studies has been rather broad with a lack of discrimination between depressive and anxiety symptoms. The present study deals with these prior limitations: we use longitudinal data of a large representative cohort of working persons, and will assess the incidence of

depressive and anxiety disorders among persons who start out without depressive and anxiety disorders. Our first hypothesis ('Working conditions Hypothesis') is that poor working conditions (low job security, low decision latitude, and high psychological demands) increase the risk of 2-year incident depressive and anxiety disorders.

Besides the knowledge of the impact of working conditions on mental health, the awareness of the importance of support from the social network is growing (Baum 1999; McKenzie et al. 2002). A good, stable social network that provides social support can positively influence mental health (Brown & Gary 1987; Kendler et al. 2005). In addition to a direct effect, social support may, according to the buffering hypothesis, be especially effective in stressful circumstances (Greenblatt et al. 1982; Olstad et al, 2001), and could theoretically reduce the negative effect of poor working conditions. The buffering effect of social support from co-workers on the relationship between work stressors and mental health was not supported in studies by Loscocco and Spitze (1990) and Sanne et al. (2005). However, it could be that social support from intimate others may be a more important source of social support that provides buffering. In a prospective population study, Olstad et al. (2001) indeed found a buffering effect of overall social support on the relationship between work stress and a general indicator of mental distress. Whether this protective effect is also strong enough to reduce the incidence of mental disorders remains to be demonstrated. The present study will examine the buffering effect of social support, and hypothesizes that social support buffers the negative effect of poor working conditions on incident depressive and anxiety disorders ('buffering effect hypothesis').

A consistent finding in previous research is that the incidence of depressive and anxiety disorders in women is approximately twice as high as among men (Alonso et al. 2004; Bebbington 1998; Bijl et al. 1998a; de Graaf et al. 2002; Weich et al. 1998). In general, men report better working conditions than women (Blidt et al. 2002; Pugliesi 1999; Roxburgh 1996). Research also shows that gender differences in social support exist: women provide and receive more social support than men receive and they appear to be more sensitive to the effect of social support (Beehr et al. 2003; Pugliesi & Shook 1998; Reevy & Maslach 2001; Walen & Lachman 2000). It has been suggested that because women not only receive, but also give more social support than men do, they may be more negatively affected by emotional strain of network members (Fuhrer et al. 1999; Stansfeld et al. 1998; Walen & Lachman 2000). And in line with this suggestion, in some studies women even appeared to profit less from social support than men (Stansfeld et al. 1998; Schwarzer & Gutierrez-Dona, 2005). Therefore, because women may have more unfavorable working conditions and may profit less from social support than men do, the female preponderance of depressive and anxiety disorders could be partly due to the social circumstances. Consequently, the final

hypothesis of the present study is that working conditions and social support contribute to the explanation of gender differences in the incidence of Depressive and Anxiety Disorders ('Gender differences Hypothesis').

Using 2-year longitudinal data of the Netherlands Mental Health Survey and Incidence Study (NEMESIS), we will explore whether work characteristics and social support contribute to the onset of depressive and anxiety disorders in a large general population of working men and women without baseline depressive and anxiety disorders.

Method

Sampling and procedures

The NEMESIS is an epidemiological study in the Dutch general population to determine the prevalence, incidence and course of psychiatric disorders using assessments in 1996, 1997 and 1999. A representative sample of 7076 adults, aged 18–64 years, was interviewed by trained and intensively monitored interviewers. The primary diagnostic instrument was the Composite International Diagnostic Interview (CIDI, Robins et al., 1988), designed to assess mental disorders according to the Diagnostic and Statistical Manual of mental disorders, (DSM-III-R). The objectives, design and response of NEMESIS have been previously described (Bijl et al, 1998b; Vollebergh et al 2001).

For the present study, we used data of the second (1997) and the third (1999) waves of data collection. The second wave was considered baseline since this is the time point during which social support and working conditions were assessed. Because the current study examined the 2-year incidence of depressive and anxiety disorders among working males and females, only persons with paid work (≥8 h a week) and persons without any existing mental disorders in the year prior to baseline were included. We excluded not only prevalent depressive and anxiety disorders at baseline but also other mental disorders (e.g. substance dependency or psychosis) since these conditions may confound the relationship between environmental risk and protective factors and the onset of depressive and anxiety disorders. For the same reason, we excluded baseline respondents who were (partially and/or temporary) unfit to work. The second wave of NEMESIS included 3048 working respondents without a mental disorder in the prior year. Of these, 2646 (87%) were re-interviewed 2 years later: 1529 men and 1117 women in the age 18–65 years. Compared to respondents, non-responders were a little younger (38.3 vs. 39.6 years; $p<0.05$) and had a lower level of education (level 2.1 vs. 2.2; $p<0.01$). There were no statistical significant

differences between responders and non-responders in terms of gender, marital status, working conditions and social support.

Incidence of depressive and anxiety disorders

The dependent variable of this study was the 2-year incidence of depressive and anxiety disorders, as defined by DSM-III-R criteria and as measured using the CIDI interview. The CIDI is a structured interview developed by the World Health Organization (WHO) and designed for use by trained interviewers who are not clinicians (Robins et al., 1988). Depressive disorders (2-year recency) included major depression and dysthymic disorder, and anxiety disorders included social phobia, generalized anxiety disorder, simple phobia, and panic disorder with or without agoraphobia. Analyses were conducted for depressive disorders and anxiety disorders separately as well as for both groups of disorders together.

Working conditions

The Job Content Questionnaire (Karasek et al.1998) was used to measure working conditions, which consisted of 21 dichotomous items based on the Demands/Control model (Karasek & Theorell 1990). In line with the original questionnaire, a factor analysis separated three factors with items that had a factor loading of more than 0.40 each. The first dimension was psychological demands, and contained five items (work fast, work hard, insufficient time to do work, excessive work, conflicting demands). For this scale the Cronbach's Alpha was 0.73. The second dimension was decision latitude containing 11 items (can choose how to perform work; have freedom to plan tasks; can decide order of tasks; can take a break; can choose work tempo; keep learning new things; can develop skills; job requires skill; task variety; job requires creativity; repetitious work) with a Cronbach's alpha of 0.73. The third dimension was job security with three items (recent layoff; future layoff; steady work) and the Cronbach's alpha was 0.66. Positive answers scored 1 and negative answers scored 0. Scales were computed when the number of missing values was not more than 2 (or 1 for job security) by dividing the sum score by the number of items minus the number of missing values. This resulted in three scales ranging between 0 and 1.

Social support

Social support was measured using the daily emotional support subscale of the interconnected Social Support Questionnaire for Transactions (SSQT) and the Social Support Questionnaire for Satisfaction with the supportive transactions (SSQS) (Doeglas et al., 1996). Frequency of daily emotional support and evaluation of daily emotional support were measured with five items on a 1–4 Likert scale. The higher the score, the more supportive transactions and the better the satisfaction with the support received. The items of these scales are about friendliness, warmth and affection of people in the respondents'

environment and willingness to lend a friendly ear, and are not problem-oriented. A combined scale of SSQT and SSQS (with a range 5–20) was used since these subscales were highly correlated and the combined scale had a good internal consistency: Cronbach's alpha of the combined scale was 0.80.

Sociodemographic variables

Analyses were controlled for socio-demographic variables, including age, gender (0 = male, 1 = female), level of education and physical health. Level of education was divided into three categories (1 = low, elementary or lower vocational education, 2 = middle, general intermediate vocational or general secondary education 3 = high, higher vocational, college or university education). Health status was measured by counting the presence of various chronic diseases for which the respondent had medical treatment (lung diseases, cardiovascular diseases, cancer, diabetes, arthritis, kidney or liver diseases and muscular diseases).

Statistical analyses

Differences in socio-demographics, working conditions and social support between respondents and non-respondents and between both sexes were tested with χ^2 tests for categorical variables and t-tests for continuous variables. The incidence of depressive and anxiety disorders was a dichotomous dependent variable (0 = no depressive and anxiety disorder; 1 = depressive and anxiety disorder).Missing values of the variable education (n = 35) were replaced by its mean value (2). To test the working conditions hypothesis, the relationships of working conditions with the incidence of depressive and anxiety disorders were examined with logistic regression analyses, controlled for age, gender, education, and health. The interaction effects of gender on the relationship of working conditions were tested by entering the gender*working condition interaction terms in the same adjusted model in which we tested the main effect of the working condition. Subsequently, the interactions between social support and working conditions were tested through entering product terms in adjusted logistic regression models in which variables for working condition and social support were also included (the buffering effect hypothesis). Finally, the relative risks of depressive and anxiety disorders by gender were computed in various models with and without working conditions and social support, in order to assess the contribution of working conditions and social support variables to the explanation of gender differences in the incidence of depression and anxiety (third study hypothesis).

Table 1. Sociodemographic characteristics, working conditions, social support and the 2-year incidences of depressive and anxiety disorders in working females and males (n=2646)

	Total sample	Females	Males	Gender difference
	N = 2646	*N* = 1117	*N* = 1529	(p-value)
Socio demographic characteristics				
Age	39.6 (± 9.8)	38.5 (± 9.9)	40.4 (± 9.6)	<0.001
Number of chronic diseases	0.18 (±0.46)	0.21 (±0.50)	0.16 (±0.43)	<0.01
Level of education (n=2611):				<0.001
Low (%)	18.1	14.9	20.5	
Medium (%)	44.4	49.4	40.8	
High (%)	37.5	35.8	38.8	
Social Support:				
Living with partner (%)	76.3	73.3	78.5	<0.01
Daily Emotional Support (n=2636)	14.7 (± 1.5)	15.1 (± 1.5)	14.3 (± 1.4)	<0.001
Work characteristics:				
Self employed (%)	11.1	10.6	11.4	0.53
Executive position (%)	39.9	25.5	50.5	<0.001
Hours of work per week	37.3 (±13.1)	29.0 (±11.8)	43.4 (±10.3)	<0.001
Psychological Demands (n=2641)	0.50 (±0.33)	0.47 (±0.34)	0.52 (±0.32)	<0.001
Decision Latitude (n=2642)	0.82 (±0.20)	0.76 (±0.21)	0.86 (±0.18)	<0.001
Job Security (n=2641)	0.86 (±0.28)	0.86 (±0.27)	0.85 (±0.28)	0.33
2 Year incidences:				
Depressive disorders (%)	4.5	6.2	3.2	<0.001
Anxiety disorders (%)	3.4	5.7	1.6	<0.001
Depressive and Anxiety disorders (%)	7.1	10.5	4.6	<0.001

[a] *Significance tests on differences between females and males were for chi-square on categorical variables and t-tests on continuous variables.*

Results

Differences in working conditions and social support between working men and women

Table 1 shows study characteristics among the 2646 working male and female adults. Women were younger, had lower levels of education, and had a higher number of diseases than men. Compared to men, women worked fewer hours a week and had less often an executive position. Men reported higher levels of psychological demands at work and more decision latitude than women did. Women reported receiving more daily emotional support than men did.

Incidence of depressive and anxiety disorders in working and women

The 2-year incidence of anxiety and depressive disorders in our sample was 7.1%. 89 respondents had a 2-year incident anxiety disorder, and 117 respondents had a 2-year incident depressive disorder. For anxiety and depressive disorders together, there were 188 incident cases, which indicates that 19 respondents (10.1% of the incident cases) had both disorders. Table 1 shows that women, compared to men, had about twice the incidence of depressive disorders and three times the incidence of anxiety disorders.

Table 2. Relative risks of depressive and anxiety disorders by working conditions, adjusted for age, gender, health and education, and the interactions with gender

	Depressive Disorders	Gender inter-action	Anxiety disorders	Gender inter-action	Depressive and Anxiety Disorders	Gender Inter-action
	RR (95%CI)	p-value	RR (95%CI)	p-value	RR (95%CI)	p-value
Working conditions: Psychological Demands (n=2461)	3.49(1.93-6.32) **	0.55	1.46(0.77-2.78)	0.30	2.29(1.44-3.36)**	0.18
Decision Latitude (n=2642)	0.83(0.31-2.23)	0.69	0.73(0.25-2.15)	0.43	0.81(0.37-1.78)	0.84
Job Security (n=2641)	0.72(0.38-1.34)	0.46	0.65(0.32-1.33)	0.03	0.69(0.42-1.15)	0.03
Daily Emotional Support (n=2636)	0.79(0.71-0.89)**	<0.01	0.79(0.70-0.90)**	0.83	0.78(0.71-0.86)**	0.06

*$p < 0.01$;
** $p < 0.001$

Impact of working conditions on incidence of depressive and anxiety disorders

Regarding the three dimensions of working conditions, only psychological demands had a significant effect on the incidence of depressive and anxiety disorders in the adjusted analyses (Table 2). In agreement with our expectations, the risk of depressive and anxiety disorders increased with a higher level of psychological demands. There was no significant effect for decision latitude or job security. For each working condition, the interaction with gender was tested. There were no gender interactions for psychological demands and decision latitude, illustrating that the mental health effects of these two working conditions were consistent across gender. There was, however, a significant interaction of gender with job security for the incidence of depressive and anxiety disorders (RR = 0.71, 95% CI: 0.52–0.97), which was mainly driven by anxiety disorders. Further analyses revealed that job security decreased the risk of incident depressive and anxiety disorders in women (RR = 0.43, 95% CI: 0.23–0.80) but not in men (RR = 1.38, 95% CI: 0.55–3.51). Because of the large gender

difference in work hours and executive position, we repeated the analyses while controlling for these two variables, but this did not change the results.

The buffering effect of social support

The direct effect of daily emotional support on the incidence of depressive and anxiety disorders was significant, and in agreement with our expectations (Table 2). More daily emotional support was associated with lower risks of depressive and anxiety disorders. We also found an interaction effect of gender and daily emotional support, which was driven by depressive disorders incidence (RR of depressive disorders was 1.68; 95%CI: 1.18–2.40). Subsequent analyses showed that men profit more from daily emotional support than women do: among men the incident depressive disorder risk for daily emotional support was 0.68 (95% CI: 0.57–0.80), and among women 0.92 (95% CI: 0.79–1.06).

Table 3. Relative risks of depressive and anxiety disorders and interaction of social support, by working conditions, adjusted for age, gender, health, and level of education

	Depressive Disorders RR (95% CI)	Anxiety Disorders RR (95% CI)	Depressive and Anxiety Disorders RR (95% CI)
Daily Emotional Support			
*Psychological Demands (n=2631)	0.92 (0.77 – 1.10)	0.84 (0.70 – 1.01)#	0.88 (0.76 – 1.01)# [a]
*Decision Latitude (n=2613)	0.81 (0.69 – 0.96)*	0.85 (0.71 – 1.02)#	0.87 (0.76 – 0.99)* [b]
*Job Security (n=2631)	1.04 (0.90 – 1.19)	1.02 (0.87 – 1.19)	1.02 (0.90 – 1.14)

# $p<0.10$; * $p<0.05$

[a] In low support group RR = 3.70 (1.92 – 7.14); in high support group RR= 1.38 (0.71 – 2.69).

[b] In low support group RR = 1.46 (0.45 – 4.74); in high support group RR= 0.55 (0.18 – 1.70).

The buffering effects of daily emotional support on working conditions (psychological demands, decision latitude, and job security) were tested using interaction terms added into the models (Table 3). There seemed to be interaction effects of daily emotional support with psychological demands for anxiety disorders and the depressive and anxiety disorders combined (p00.10), but not for depressive disorders. We analyzed the effect of psychological demands din a group with high levels of daily emotional support (above mean) and a group with low (mean or lower) daily emotional support. The relative risk of incident depressive and anxiety disorders associated with psychological demands in the group with low daily emotional support was 3.70 (95% CI: 1.92–7.14) and in the group with high daily emotional support it was 1.37 (95% CI: 0.43–2.78). This is supportive for the buffering effect hypothesis;

however, this effect was driven by anxiety disorders, and not by depressive disorders. In addition, the interaction of daily emotional support with decision latitude was significant for depressive disorders incidence (p00.05) but this interaction effect was less pronounced for anxiety disorders (p00.10). The relative risk of incident depressive and for anxiety disorders associated with decision latitude in the group with low daily emotional support was 1.46 (95% CI: 0.45–4.74), which was 0.55 (95% CI: 0.18–1.70) in the group with high daily emotional support. Although the mental health effect of decision latitude appeared to be conflicting for persons with high and low support, in both groups the effect of decision latitude was not significant.

Table 4. Comparing the risks of incident depressive and anxiety disorders for women compared to men in various models

	Depressive Disorders RR (95% CI)	Anxiety Disorders RR (95% CI)	Depressive and Anxiety Disorders RR (95% CI)
Model1 (n=2646) Unadjusted gender risk	1.99 (1.37 – 2.89)**	3.66 (2.29 – 5.84)**	2.40 (1.77 – 3.26)**
Model 2 (n=2646) Adjusted gender risk for Demographic Characteristics[a]	1.90 (1.30 – 2.78)*	3.44 (2.14 – 5.52)**	2.29 (1.68 – 3.12)**
Model 3 (n=2636) Adjusted for Demographic Characteristics [a] Working conditions [c]	2.03 (1.37 – 3.01)**	3.46 (2.12 – 5.64)**	2.39 (1.73 – 3.30)**
Model 4 (n=2636) Adjusted gender risk for Demographic Characteristics[a] Social Support [c]	2.29 (1.55 – 3.38)**	4.07 (2.57 – 6.60)**	2.78 (2.02 – 3.82)**
Model 5 (n=2636) Adjusted gender risk for Demographic Characteristics[a] Working conditions [b] Social Support [c]	2.45 (1.63 – 3.68)**	4.14 (2.51 – 6.83)**	2.71 (1. 93 – 3.81)**

* p<0.01; **p<0.001.
[a] Age, Education and Health.
[b] Psychological Demands, Decision Latitude and Job Security.
[c] Daily Emotional Support.

Gender and the incidence of depressive and anxiety disorders

In the working population, the relative risk of incident depressive and anxiety disorders for women compared to men, adjusted for age, health and education, was 2.40 (95% CI = 1.77–3.26) (Table 4). Adjusted for education, age and health, this risk decreased slightly, but not significant. Addition of social support variables even increased the gender difference, and in the final model, with both working conditions and social support variables, the gender

difference appeared to be even slightly larger compared to the unadjusted model. This was found in both depressive disorders and anxiety disorders.

Analysis in a sample without lifetime diagnosis

In our analyses, we used a sample of persons without any diagnosis of a mental disorder in the prior year and examined the incidence of depressive and anxiety disorders in the next two years. Persons with a diagnosis earlier in their lifetime were included, which may have influenced the found results. We repeated all analyses in a sample without any lifetime diagnoses (n = 2578) and results were very similar.

Discussion

In this study, we tested three hypotheses concerning the relationships of both working conditions and social support with the incidence of depressive and anxiety disorders. For the working conditions hypothesis, we expected that better working conditions decrease the risk of depressive and anxiety disorders. This was supported in the case of psychological demands, but not for the effects of decision latitude and job security. The hypothesized interaction between psychological demands and decision latitude was not found. Our results therefore only partially confirm previous study results (Karasek et al., 1998; Siegrist, 1996; Stansfeld et al., 1999) and may negate the direct causal relationship of decision latitude and its interaction effect with psychological demands on the onset of depressive and anxiety disorders.

There was also some support for the buffering effect hypothesis. We found interaction effects of daily emotional support with psychological demands and with decision latitude for the risk of incident of depressive and anxiety disorders. However, this was restricted to anxiety disorders. The interaction effect of daily emotional support with decision latitude indicated that the risks for the incidence of depressive and anxiety disorders tended to decrease under the conditions of high daily emotional support in combination with high levels of decision latitude, but tended to increase when both decision latitude and daily emotional support were low. Decision latitude had no direct relationship with the incidence of depressive and anxiety disorders. Therefore, daily emotional support does not buffer the negative effects of poor working conditions, but seems to be a conditional factor for the effects of decision latitude and psychological demands.

In our last hypothesis, we assumed that differences in working conditions and social support could contribute to the explanation of the gender difference in the incidence of

depressive and anxiety disorders. The results did not support this hypothesis. The impact of working conditions and social support were, on the whole, consistent for both the incidence of depressive as well as anxiety disorders, although some differences appeared. Higher psychological demands did increase the risk of depressive disorders, but not anxiety disorders. Among women, job insecurity was a risk for anxiety disorders and not for depressive disorders. We also found a gender interaction with daily emotional support for the incidence of depressive disorders, but not for anxiety disorders. These subtle distinctions between the effect of working conditions and social support in both disorders suggest that it is worthwhile to distinguish between depressive and anxiety disorders or symptoms in future research.

Although women report poorer working conditions than men, this does not contribute to the explanation of the gender difference in the incidence of depressive and anxiety disorders. Except for job security, the effect of working conditions on the onset of depressive and anxiety disorders was similar for women and men, which is in line with other findings (Evans & Steptoe, 2002; Pugliesi, 1999; Roxburgh, 1996). Surprisingly, job insecurity was an indicator for the incidence of anxiety among women, and not among men. Although men work more hours than women do, imminent work loss has more impact on women's mental health.

The favorable effect of daily emotional support we measured in this study was stronger for men than for women. Schwarzer and Gutie´ rrez-Dona (2005) reported similar results. They found that the correlation between spousal support and depression was only significant among men. In a prospective study (Whitehall II study), Fuhrer et al. (1999) showed a comparable gender difference: low emotional support was associated with psychiatric morbidity among men, not among women. Overall, daily emotional support did not contribute to the explanation of the gender difference in the incidence of depressive and anxiety disorders.

A limitation of our study is the rather general social support indicator; however, our assumption was that emotional support received is beneficial independent of the providers. When we conducted additional adjusted regression analyses in which both daily emotional support and partner status were entered in one model, the effect of daily emotional support was a significant predictor for incident depressive and anxiety disorders, but partner status was not. Especially for a buffering effect of social support in the relationship between working conditions and anxiety and depressive disorders, the role of co-workers and supervisors could be important. However, in several studies the hypothesis that social support by co workers can buffer the effect of poor working conditions was not supported (Doef & Maes, 1999; Sanne et al., 2005).

Another limitation of this study is that non-responders were a little younger and less educated than responders, and therefore may have poorer working conditions. It is also known that non-responders are likely to have a poorer mental health (Graaf, Bijl, Ravelli, Smit, & Vollebergh, 2000), and this may have resulted in an underestimation of our effects of working conditions on the incidence of depressive an anxiety disorders.

The strong points of this study are the prospective data from a large general population and the adequate measurements of depressive and anxiety disorders. Daily emotional support was a relevant aspect of the social environment that can affect people's mental health. The longitudinal results of our study may indicate that in cross-sectional studies the influences of decision latitude and of job security are over-estimated, because depressive symptoms may influence scores on these scales. On the other hand, these working conditions could affect symptoms of anxiety and depression, but this effect may be not strong enough for the onset of depressive and anxiety disorders. However, our longitudinal study points out that experiencing high psychological demands is an important working condition that can contribute to the onset of depressive disorders among both men and women; an effect that cannot be buffered by daily emotional support.

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CHAPTER 5

MAD ABOUT THE JOB?
AN ANALYSIS OF FACTORS THAT INFLUENCE WORK-RETENTION FOR PEOPLE WITH A MENTAL DISORDER

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Een onderzoek naar factoren voor werkbehoud bij mensen met psychische stoornissen
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Abstract

Incapacity to work due to a mental disorder is a common phenomenon in the Netherlands. But not all employees with a mental disorder are permanently incapacitated. The aim of this study was to identify the factors which help people with a mental disorder to stay in employment. The data were drawn from the files of 135 clients from a psychiatric out-patients clinic. They suggested that, besides a number of favourable personal factors (youth, good physical health and a diagnosis of social phobia), the way in which colleagues relate to a mental disorder is an important factor in determining the employee's ability to stay in the job. This applies particularly to older employees with a mental disorder. The discussion explains how modernization processes can lead to the exclusion of such employees. The importance of sympathetic reactions from colleagues might be tied in with the theory that people with a mental disorder are perceived as a minority in a work environment and therefore stand to benefit from an active diversity policy. In the discussion policy recommendations are put forward on the basis of the Diversity Theory for the organization as a whole and for the individual guidance of employees.

Mad about the job?
An analysis of factors that influence work-retention for people with a mental disorder

Introduction

According to the World Health Organisation (WHO, 2001a), one in four people worldwide will develop a psychological or a behavioural disorder at some time in life. In the Netherlands this applies to as much as 41 percent of all inhabitants between the age of 18 and 65 (WHO, 2001b). Mental disorders often go hand in hand with a problematic working career (Alonso *et. al.,* 2004). Thirty-two percent of new recipients of incapacity benefit in 2004 were unable to work because of psychological complaints (PZsignaal, 15 February 2005). Though this figure is four percent down on 2001, it still accounts for almost one third of the new inflow.
The Nemesis survey[i] on psychological problems in the Dutch population revealed that one out of five working people suffers from a diagnosable mental disorder[ii]; depression, anxiety and alcoholism are particularly common. If we also include complaints such as stress, burnout, and mental exhaustion, then, according to the Nemesis study, one in three employees is affected (Laitinen-Krispijn & Bijl, 2002). More attention therefore needs to be paid to preventive measures in the work environment as well as for the individual (Cuijpers *et al.,* 2003).

This report describes a study held among employees with a mental disorder. The study does not seek to identify the factors that contribute to the development of mental disorders but focuses on the question of how people who suffer from a mental disorder might be able to continue in their job. The findings were based on data pertaining to a total sample of 135 employed and incapacitated outpatients who were attending a psychiatric clinic.[iii] The first section describes the empirical context of the study. Sections two and three address the research question and design and section four sets out the results. Section five presents the conclusions. Finally, in the discussion, the results are studied in relation to sociological theories on modernization, individualization and diversity, and policy recommendations are put forward for the organization in general and for the advisors of employees with a mental disorder. The ultimate aim is to reduce incapacity levels.

Participation in employment by people with a mental disorder

Employees who are off work because of psychological complaints are often absent for longer periods of time than employees with a physical illnesses. Reintegration after a period of

mental incapacity is usually less successful than after a period of physical incapacity (Dielis, 2000). The lengthy and difficult nature of this reintegration process is reflected in the statistics on the inflow into incapacity benefit. Table 1 shows that in 2000 one in three recipients of incapacity benefit was unable to work because of psychological complaints. As shown in Table 2, the most common diagnoses are mood disorders and adaptation disorders.

Table 1 Incapacity for work subdivided into causes (2000)

Reason	Number
Mental / behavioural disorders	304,000
Skeletomuscular disorders	264,000
Other complaints	370,000
Total recipients of incapacity benefit	938,000

Source: Factsheet on incapacity for work due to mental illness, Nederlands Kenniscentrum Arbeid & Psyche 2003.

Table 2 Incapacity benefit due to psychological complaints subdivided into sub-diagnosis (1999)

Sub-diagnosis	%
Mood disorder	34.0
Adaptation disorder	27.6
Reaction to severe stress, tension	14.6
Other mental disorder	11.9
Personality disorder	4.9
Anxiety disorder	4.7
Addiction to psychoactive substances	2.2
Total new recipients of incapacity benefit due to mental illness	100

Source: Factsheet on incapacity for work due to mental illness; Nederlands Kenniscentrum Arbeid & Psyche 2003.

The Advisory Commission on Work Incapacity (*Adviescommissie Arbeidsongeschiktheid,*2002) has recommended that efforts should be made to keep people with mental illness or psychological complaints in the labour process for as long as possible:

> "Work is a means of self-realization or social promotion and the best way to stay in touch with societal and economic developments; it creates a basis for new contacts, new knowledge and new skills in modern technology. In a fast-changing world it is not income but participation in the labour process which forms the main foundation for participation in the development of society. The protection of incapacitated members of society, when not strictly necessary, may appear social, but it leads to exclusion from the labour process and socially marginalizes the individual in question. Hence, the activation and development of the available labour potential is primarily in the interests of the individual." *Adviescommissie Arbeidsongeschiktheid*, 2001: 78.

The views expressed by the Commission fit in with Robert Castel's theory (1995; 2000) on integration and isolation processes, otherwise known as inclusion and exclusion. Castel maintains that social integration or isolation takes place along two axes: by participation in the labour process and/or in social networks, which to some extent may offset each other. For example, participation in a social network can serve as a safety net for people who do not work. Castel points out that large groups of people are becoming increasingly vulnerable and isolated as, for them, both lines of participation are fading: a social network that is too small, too loose or too homogeneous accompanied by growing uncertainty on the labour market and fewer universal rights because welfare systems are being privatized. In this situation a job is even more important as a means of preventing social isolation, especially for people who are already vulnerable because of mental illness.

This article does not address the causes of mental disorders; the ultimate aim is to identify the circumstances and factors (personal and work-related) which can help people with psychological complaints to stay in a job. To achieve this, we need insight into the conditions that facilitate work-retention for such people.

The search for the factors that facilitate work-retention

Most of the literature on work and health concentrates on the personal and environmental factors connected with the development of psychological complaints by workers (Houtman & de Jonge, 2003). Personal and environmental factors were also investigated in this study, but in relation to a group of employees who already had a diagnosed mental disorder. The chances of such people being able to stay in a job may be influenced by personal factors, which cannot be changed by policy measures. These factors include the nature of the complaint, age, gender and physical health.

One obvious environmental factor that may play a role in incapacitation and which can actually be influenced by policy measures is the work itself. Besides the concrete aspects of the job such as the tasks, level of responsibility and career prospects, the way in which the employee experiences the work and the amount of social support he receives may affect his sense of well-being and stress levels.

Though most of the publications look at the development of psychological complaints by healthy workers, the models seem to be equally applicable to people who already have a mental disorder and are therefore extra susceptible to drop-out. In their Demand-Control Model, Karasek & Theorell (1990) recognize the buffer function of social support in jobs where the combination of heavy demands and minimal autonomy leads to job-dissatisfaction and work-related stress. According to the WEB model (Work stress Energy sources Burnout

model, see Bakker *et al.*, 2000), social support and the way the work is experienced are more or less autonomous functions which counterbalance stressors such as pressure of work.

The way the work is experienced and social support from colleagues might help people with a mental disorder to keep working. The assumption is that an employee with a mental disorder who is happy with the content of the work, the workplace and the colleagues is more likely to stay in the job than one who is unhappy. We also looked at whether social support at work is particularly important for people with a mental disorder (work-related and otherwise). Take, for example, the way in which co-workers react to an employee with a mental disorder: in a corporate culture where mental illness can be freely discussed, the required work adaptations will be realized more quickly than in a culture where (mental) well-being gets little or no attention and may even be taboo. Employees and managers who openly discuss and show an understanding for mental health issues could increase the chance that a colleague with a mental disorder can continue in the job. The hypothesis that an understanding and sympathetic atmosphere at work helps to keep people with a mental disorder in the labour process more or less fits in with the findings of Nauta and van Sloten (2004), who conducted research among Dutch employees with psychological complaints and showed that a good employee-manager relationship in which there is enough trust to discuss and tackle problems helps to prevent unfitness for work. Recent Swiss research (Rüesch *et al.*, 2004) also supports the theory that it is the people with a mental disorder who particularly benefit from supportive, understanding relationships with colleagues.

The patient files that were made available for this research contained some striking illustrations of the importance of contact between colleagues and – especially – understanding at work. One example concerned a woman with a social phobia [iv] who was extremely anxious about team meetings. The problem was discussed with her team leader and together they decided that she would take the minutes. This would give her something to do during the meetings and ease her uncertainty and anxiety. Another example concerned an employee with an obsessive-compulsive disorder. He said that his symptoms increased when his colleagues teased him about his supposed homosexuality and therefore ran a greater risk of becoming incapacitated. This could have been prevented if his colleagues had offered him some social support and understood the effects of the teasing. These examples and the results reported in the literature prompted us to take a closer look at the role of social support and understanding at work.

The research questions were as follows:

1 Which *personal factors* play a role in the ability of people with a mental disorder to retain a job?

2 Which *work-related factors* play a role in the ability of people with a mental disorder to retain a job?

a Are there indications that employees with a mental disorder are more *satisfied with their work* than ex-employees who are now incapacitated?

b Are there indications that employees with a mental disorder get more *understanding reactions from colleagues at work* than ex-employees who are now incapacitated?

Research method

Respondents

The outpatients clinic of a psychiatric hospital made the files available for the empirical study. The initial sample consisted of 200 respondents who reported to the clinic for treatment in 2002. Ninety-four percent of the people in this group had Dutch nationality. For the purposes of our research we selected the working respondents (N= 92: 87 in paid employment working 15 hours or more a week and 5 self-employed) and the incapacitated respondents (N= 43: 31 on Incapacity Benefit and 12 on Sick Benefit)[v]. A total of 92 + 43 = 135 patient files were used in the analysis (see Table 3 for an overview, selected categories are in **bold**)

Data collection procedure

The patient data from the intake procedure were stored in personal files and related to personal details, physical and psychological health and social and family networks. The intake procedure and the interview were more or less standardized. There was also a self-evaluation questionnaire. The diagnosis was formed on the basis of a diagnostic test which makes use of the SCID-I (Structured Clinical Interview for DSM-IV Axis I Disorders).

Variables

In this study the dichotomous dependent variable was *work-retention*, with the values *working* (15 hours or more of paid employment per week, score 1) and *incapacitated* (receiving Incapacity or Sick Benefit, score 0).

The independent variables were (a) the personal factors and (b) the work-related factors from research questions 1 and 2. The personal factors that were studied in relation to work-retention for employees with a mental disorder were *gender*, *age*, *marital status* (married or unmarried), *level of education, physical health*, and *diagnosis*. The *age* variable consisted of five categories of ten years, as is customary in this type of research (e.g. Nemesis). *Level of education* was split into four categories, ranging from primary education (score 1) to higher professional/university education (score 4). The *physical health* variable distinguished

between people who perform less effectively because of a physical or mental illness. This variable consisted of two questions: one relating to the actual existence of physical illnesses and one relating to the subjective perception of health. Some physical illnesses, such as hypertension and diabetes, need not necessarily lead to an impaired performance. This is why people with both a physical illness and poor subjective health were categorized in our analysis as respondents with *poor physical health*. We defined all the other respondents as *physically healthy*; these included respondents who were physically ill but still felt that they were in good health and respondents who felt that their health was poor without a clear physical cause. The *diagnosis* variable was based on the most common diagnoses and resulted in five groups of mental disorder: depressive disorders, three groups of anxiety disorders (panic disorders, social phobia and other anxiety disorders) and residual mental disorders which could not be categorized under anxiety or depression (e.g. psychoses, eating disorders). [vi]

Work-related factors were operationalized with two sub-variables: *experience of work* and *reactions at work*, derived from sub-questions 2a and 2b. The sub-variables were based on the written self-evaluation questionnaire. The variable *reactions at work* consisted of the values *understanding* and *not-understanding*.[vii] For *experience of work* we used a scale that was constructed from questions regarding satisfaction with the work and the workplace and the existence of problems at work.

Table 3. The 'work-retention' variable'

Work situation of the patients	N	%
Paid employment, 15 hours a week or more	87	43.5
Incapacitated (Incapacity Benefit)	31	15.5
Unemployed/job-searchers/redundancy pay	18	9.0
Student	15	7.5
Sick Benefit	12	6.0
Voluntary work	10	5.0
Works in own household	10	5.0
Paid employment, less than 15 hours a week	6	3.0
Self-employed	5	2.5
Pensioner, retired early	2	1.0
Unknown	4	2.0
Total	200	100
Total number of people in work or on Incapacity/Sick Benefit	135	67.5

Analysis

We examined the connections between the various personal and work-related variables and the dependent work-retention variable by applying Chi-square tests to categorized variables and t-tests to continuous variables. We then used logistic regression analysis to identify the main determinants and the possible effects of their interaction with the work-retention variable. Based on our presuppositions we had certain expectations of the directions of the connection on the basis of our presuppositions, so we performed a one-sided test with a significance level of 95 percent (a = 0.05).

Table 4. Personal factors and work-retention for people with a mental disorder

Personal factors	Employed % (n)	Incapacitated % (n)
Total	68.1 (92)	31.9 (43)
Gender		
Male	71.4 (35)	28.6 (14)
Female	66.3 (57)	33.7 (29)
Age**		
18 - 24	83.3 (10)	16.7 (2)
25 - 34	70.6 (24)	29.4 (10)
35 - 44	78.6 (33)	21.4 (9)
45 - 54	57.6 (19)	42.4 (14)
55 - 64	42.9 (6)	57.1 (8)
Marital status*		
Married	78.1 (25)	21.9 (7)
Unmarried	65.1 (67)	34.9 (36)
Level of education		
Primary school	66.7 (2)	33.3 (1)
Lower secondary vocational, junior general secondary, lower secondary professional	66.7 (24)	33.3 (12)
Senior secondary vocational, senior secondary general, pre-university	72.1 (31)	27.9 (12)
Higher professional/university	64.0 (32)	36.0 (18)
Diagnosis		
Depressive disorder	70.5 (31)	29.5 (13)
Panic disorder	71.0 (22)	29.0 (9)
Social phobia**	85.7 (18)	14.3 (3)
Other anxiety disorder	64.7 (11)	35.3 (6)
Other disorder	45.5 (10)	54.6 (12)
Physical health**		
Good	81.3 (61)	18.3 (14)
Not good	51.0 (27)	49.0 (26)

* 0.10< p >0.05; ** p<0.05

N.B. due to non-response to items not all the figures add up to 135.

Results

According to the data in the 135 files, almost all the respondents (93 percent) had been diagnosed with either a depressive disorder or an anxiety disorder. Interestingly, almost half reported physical health problems alongside the mental disorder.

The analysis of the first research question (Which personal factors play a role in the ability of people with a mental disorder to retain a job?) delivered the following results: The personal variables – physical health, age and a diagnosis of social phobia – showed a significant connection with the dependent variable, work-retention. In plain terms, people with good physical health and a mental disorder stay in employment more often than people with poor physical health and a mental disorder. We also found a strong connection between age and work-retention. Young employees with a mental disorder are more often in a job than older employees with a mental disorder.[viii] It is, however, striking that employees with a mental disorder in the 25-34 age group are more often incapacitated than people in lower and higher age groups. This finding is in line with the national statistics, which indicate that incapacitation due to psychological complaints is relatively higher in this age group than in other age groups, and that this age group is the only one in which the inflow into Incapacity Benefit is still rising (*PZsignaal*, 15 February 2005). Work-retention declines in the age groups from 45 years. At this point there is a steep rise in the percentage of people with a mental disorder who cannot stay in a job.

Table 5. Relationship between work-related factors and work-retention among people with a mental disorder

Work characteristics	Employed % (n)	Incapacitated % (n)
Total	68.1 (92)	31.9 (43)
Problems at work		
No problems at work	72.4 (42)	27.6 (16)
Problems at work	68.2(45)	21.8 (21)
Satisfied with the work		
Positive	75.0 (54)	25.0 (18)
Not positive	64.8 (35)	35.2 (19)
Satisfied with the work environment		
Positive	73.8 (48)	26.2 (17)
Not positive	67.7 (42)	32.3 (20)
Experience of the work		
0 factors	64.3 (18)	35.7 (10)
1 factor	66.7 (20)	33.3 (10)
2 factors	70.4 (19)	29.6 (8)
3 factors	77.8 (28)	22.2 (8)
Reactions at work** (n = 128)		
Understanding	77.8 (42)	22.2 (12)
Not understanding	60.8 (45)	29.2 (29)

* 0.10< p >0.05; ** p<0.05
N.B. due to non-response to items not all the figures add up to 135.

Although the percentage of incapacitated women is greater than the percentage of incapacitated men we found no significant connections between gender and work-retention in this set of data. Men with a mental disorder were neither more nor less frequently at work than women with a mental disorder. We did find that slightly more married people with a mental disorder were at work than unmarried people, but the difference was not statistically significant.

The second research question was*: Which work-related factors play a role in the ability of people with a mental disorder to retain a job?* The results of the analysis are shown in Table 5. One particularly interesting result was the connection between a social phobia diagnosis and work-retention. Work-retention is more common among people with a social phobia (extreme anxiety for social situations such as speaking or eating in public) than among people with another mental disorder. Table 4 provides an overview of the personal factors in relation to work-retention.

The internal consistency of the scale for experience of work was 0.65 (Cronbach's alpha). Half of the people with a mental disorder said they had problems at work. Another interesting result is the fairly negative rating accorded to the work: 43 percent of all the respondents did not rate the work positively.

One third of the employed respondents did not give a positive rating to the work. The hypothesis that people with a mental disorder who are satisfied with their work are more capable of staying in a job cannot therefore be confirmed.

No statistically significant connection was found between experience of work and capacity for work. By presenting experience of work as separate factors rather than as a scale, it did become clear that more people were in employment in proportion to the (cumulative) positive factors (satisfaction with the work and the workplace, and fewer problems at work). This is shown in Table 5.[ix]

A strong connection emerged between *reactions at work* and *work-retention*. It seems that people with a mental disorder who have managed to retain their job experience more *understanding reactions at work* than people who are incapacitated (research question 2b.). People with a mental disorder who experience the reactions at work as understanding are more often in employment.

Table 6. Age, reactions at work and interaction between age and reactions at work

	Work retention Odds ratio (95% reliability interval)
Age	0.916 (0.867–0.986)*
Reactions at work	0.562 (0.231–1.364)
Age* reactions at work	0.899 (0.822–0.983)*

* p<0.05

This raises the question whether an *interaction effect* exists between personal factors (age, physical health and a diagnosis of social phobia) and work-related factors. We found an interaction effect for *age* in the connection between *reactions at work* and *work-retention*. A logistic regression analysis showed that the main effect of reactions at work on work-retention was not significant. On the other hand, an interaction did appear to exist between *reactions at work* and *age*. The older the person, the greater the importance of reactions at work for work-retention. If the reactions are negative, there is a greater chance that older employees will not be able to stay in the job. Conversely, when an older employee with a mental disorder experiences the reactions at work as positive, there is a greater chance that he will be able to continue. Table 6 shows the results of the logistic regression analysis. We have restricted ourselves to reporting only significant results.

To recap, in this study five variables/factors were identified with the potential to optimize work-retention for people with a mental disorder. The personal factors were: younger than 45, good physical health, and social phobia as the main diagnosis. The work-related factors were a positive experience of work (i.e. no problems at work and satisfied with the work and the work environment) and understanding reactions from colleagues.

We then looked at the cumulative effect of these five factors and found that the 14 respondents to whom four or more of these factors applied were all still at work (Table 7).

Table 7. Factors for work-retention among people with a mental disorder (n = 122)

Number of positive factors for work-retention (age<45, good health, diagnosed with social phobia, positive experience of work understanding reactions at work)	Fit for work		Sick / Incapacity Benefit	
0 factors	3	25.0%	9	75.0%
1 factor	11	47.8%	12	52.2%
2 factors	32	78.0%	9	22.0%
3 factors	24	75.0%	8	25.0%
4 factors	13	100.0%	-	0.0%
5 factors	1	100.0%	-	0.0%
Total	84	69.7%	38	30.3%

Conclusions from the empirical study

Despite the limitations of this study, particularly the limited amount of data for the work situation, there are indications that certain factors play a role in the ability of people with a mental disorder to retain a job. The study revealed a clear connection between work-retention and the personal factors of age and physical health. These findings are not surprising. It also emerged that married people in this sample were slightly more often in

employment than unmarried people. This is in line with the findings for employees without a mental disorder (i.a. Stelten & Copinga, 2003). There appears to be some support for the hypothesis that married people with a mental disorder get support from their partner and can therefore stay longer in a job.

People with a social phobia as the main diagnosis appeared to be employed more often than people with another diagnosis. Perhaps employed sufferers of social phobia have more trouble with the disorder than unemployed sufferers and are therefore quicker to request help. In a work situation it is not easy to avoid social situations that elicit anxiety. Extreme shyness or social anxiety can, for example, stand in the way of promotion at work.

Among the work-related factors *experience of work* and *reactions at work* appeared to be connected with work-retention. Positive experience of work appears to encourage people with a mental disorder to keep working. This study showed convincingly that understanding reactions at work have a positive effect on work-retention. This effect becomes more important as the employees grow older. In other words, employees with a mental disorder run a greater risk of becoming permanently incapacitated as they get older, but support at work in the form of understanding reactions enhances the chance that they will be able to stay. The findings correspond with the results of earlier research which confirmed the importance of social contact at work (Nauta & van Sloten, 2004; Rüesch *et al.,* 2004). This study added the factor 'life phase' as it appears that the importance of social contact at work increases with the age of the employee with the mental disorder.

Discussion and policy recommendations

Most of the previous research on work and mental health was conducted from a medical or psychological perspective. In this article the topic is approached from a sociological perspective with the emphasis on work-related factors that play a role throughout the working career.

Modernization thesis

The literature on the sociology of modernization and individualization (i.a. Castel, 1995; Rose, 1996; Sennett, 1998) assumes that the fast pace of modern life and increasing individualization will lead to higher stress levels and more mental illness. The skills and knowledge of employees are exposed to mounting pressure, but at the same time, more emphasis is being placed on self-reflection, making choices and emotional control (Van der Loo & Van Reijen, 1997). Employees are expected to be responsible, sensible, upright, well-adjusted and self-aware citizens (Rose, 1996). This makes it extra difficult for people with a

mental disorder to hold their own at work. The rise in the number of employees who request help because of psychological complaints seems to confirm this hypothesis.

Richard Sennett (1998) highlights one particular consequence of the modernization (in this case the flexibilization) of the organization of labour. He bases his argument on the developments in the USA – which are regarded as trend-setting for Europe. The flexible economy of the 1990s has made employees exchangeable and temporary contracts have made their future uncertain. Sennet maintains that the knowledge that one is exchangeable is causing character corrosion among employees (1998).

Hutschemaekers (2000) stresses that mental health – far more than general health – is tied in with sociological variables such as time and culture and thus echoes the ideas of Foucault (1963), who searched for the causes of growing (mental) aberrations in the modern era in the long-term normalization process. According to Foucault, the obsession with classification in medical science is leading to a far sharper distinction between healthy and unhealthy, and between mentally normal and abnormal. The increasingly precise and consistent descriptions of certain phenomena mean that (psychological) syndromes can be diagnosed more accurately and can therefore be treated sooner. However, this improved knowledge is also giving professionals more power to classify individuals as sick or healthy, normal or abnormal. Whatever deviates from the norm should be corrected by treatment.

Hutschemaekers (2000) also questions whether mental illness is indeed more prevalent in modern society – as the figures suggest. The transfer of knowledge about health and well-being is turning people into 'protoprofessionals' and increasing the likelihood that they will seek help for their complaints (De Swaan, 1988). What used to be part and parcel of life is now ill and treatable. But this, in turn, is creating a certain pressure. Modern, assertive people are expected to come into action and personally take charge of their own health problems.

Mental health is regarded as an active responsibility of the individual. But this approach harbours a threat; for, a mental disorder may come to be seen as a sign of individual failure instead of the result of a convergence of circumstances. Individual responsibility for mental health could come to replace a more collective concern for one another's mental well-being. An employee who cannot meet the norm of 'mentally healthy' has a personal problem that he needs to solve. Colleagues and managers will not feel co-responsible. As a result, employees with a mental disorder run a greater risk of exclusion, for example, if they are declared unfit for work.

Diversity

The aim to keep people with psychological complaints or mental disorders at work might be seen as a policy response to the normalization processes triggered by modernization. Normalization makes deviation identifiable. In a work environment this can lead to the exclusion of deviants. As in the case of age, gender and ethnic origin, a mental disorder can signify a certain 'otherness'. An active diversity policy[x] makes the term 'deviant from the norm' meaningless, especially in a group. A diversity policy aims to create a work environment with space for all sorts of employees who differ not only in age, gender and ethnicity but also in physical and psychological disabilities (Thomas, 1995).

According to Triandis (1995), the central issue in the study of diversity is the degree to which one perceives similarities between oneself and another. This depends on the context and size of the differences. A cosmopolitan setting characterized by different languages, clothing, religion and/or skin colour provides more opportunities for regarding the other person as 'one of us' than a homogeneous setting.

If very wide differences exist between a more or less homogeneous group and an odd-man-out, it will be more difficult for the odd-man-out to be perceived as a group member. In organizations with a heterogeneity of psychological habitus someone with a mental disorder is less conspicuously 'out of place' than in an organization with a homogeneity of psychological habitus. The observation of the similarities between different groups of people can lead to the development of isomorphic attributions, i.e. attributing the same meaning to the behaviour of people from different groups (Triandis, 1995). In the Diversity Theory [x] of Triandis the degree to which isomorphic attributions are developed between groups (employees) co-determines the success of integration in a (work) environment. Isomorphic attributions could be facilitated if the employees with a mental disorder were able to explain the cause of their behaviour or the need for work adaptation to their colleagues. Scope to discuss mental health issues can generate a certain degree of recognition.

Attention could also focus on the healthy aspects of the employee's performance. That way, empathy could be encouraged on both sides and misinterpretations of behaviour could be prevented. The other employees will then realize, for example, that adaptations such as flexible working hours or a lower workload are necessary and not signs of favouritism on the part of the manager. Isomorphic attributions can lead to more sympathetic reactions at work. They can narrow the social distance between an employee with a mental disorder and his colleagues and hence make it easier for the employee to cope with the work.

An active diversity policy at corporate level could help people with a mental disorder to remain in employment. At individual level, sick-leave counsellors, company doctors,

managers and individual coaches in the mental healthcare services could devote more attention to the way in which the employee and the colleagues relate to mental disorders. At individual level this would mean that, besides receiving treatment for the actual disorder, the employee would be trained to apply social skills in work situations to stimulate the development of isomorphic attributions at work and to learn how to win more understanding in the (work) environment for his (temporarily changed) behaviour.

The Diversity Theory and the role of isomorphic attributions would provide good openings for further research on work-retention for employees with a mental disorder. The importance of social contacts for work-retention is also in line with Castel's theory (1995, 2000) that the stronger the trend in flexibilization and individualization, the greater the importance of social embedment in the form of labour. This certainly applies to people with a mental disorder who, because of their vulnerability, run a greater risk of being sidelined.

Notes

i Nemesis (The Netherlands Mental Health Survey and Incidence Study) was conducted among the same members of the Dutch population in 1996, 1997 and 1999. The number of respondents in employment were 4,783, 3,810 and 3,348 respectively. See Laitinen-Krispijn & Bijl, 2002.
ii Diagnosable mental disorders are disorders that meet the criteria of the DSM-IV, the classification system for mental disorders of the American Psychiatric Association.
iii These data come from AMSTAD, the Amsterdam Study on Anxiety and Depression. This was anonymized file research at aggregated level.
iv A social phobia is an anxiety disorder in which the sufferer is clearly afraid (more than the average person) of certain social situations, such as speaking or eating in public.
v Anonymized research at aggregated level.
vi A depressive disorder is understood as a current episode of depression within a depressive disorder, a bipolar disorder, or dysthymia. A panic disorder is an anxiety disorder with panic attacks and/or agoraphobia linked to the fear of being unable to escape certain places or situations (not due to post-traumatic stress or social phobia). A social phobia is an anxiety disorder where the sufferer is clearly anxious (more than average) for certain social situations, such as speaking or eating in public. Other anxiety disorders includes a post-traumatic stress disorder, a generalized anxiety disorder and an OCD. Other disorders may refer to addiction problems or psychoses.
vii The variable 'reactions at work' was operationalized with three questions. The first asked how the environment responded to the mental disorder of the client. It was answered on a 5-point Likert scale ranging from 'very understanding' to 'very dismissive'.
The question was recoded. The categories 'very understanding' and 'understanding' were given Code 1 (understanding), the categories 'neutral', 'dismissive' and 'very dismissive' were given Code 2 (not understanding). The second part offered an opportunity to explain the answer. Comments relating to the work situation were recoded. For example, the comment 'People understand me at home, but at work no-one understands at all' led to a recoding of the answer to 2.
viii P= 0.003. The average age of the working respondents was 38.23 years (SD= 9.64) and the average age of the incapacitated respondents was 43.40 (SD = 10.55).
ix The concept 'experience of work' was constructed from three variables: satisfied with the work, satisfied with the workplace and problems at work. The questions for the first two variables were 'How do/did you feel about the work?' and 'How do/did you feel about the workplace?'. Both questions could be answered on a 6-point Likert scale with answers ranging from 'very good' to 'very bad'. Socially desirable answers to the questionnaire were expected. People who are happy with their work would answer this question with 'good' or 'very good'. The category 'reasonable' suggests an element of criticism, which might indicate dissatisfaction. Hence the answers 'good' and 'very good' were coded as 'positive' and 'reasonable', 'bad' and 'very bad' as 'negative' for experience of work. The question 'Are/were there specific problems at work?', which could be answered with a straight Yes or No was used as an instrument for the variable 'problems at work'.
x The Diversity Theory is geared primarily to labour organizations and deals with group differences and similarities not only on the basis of cultural origin but also gender, age and disabilities (Thomas, 1995). Social identity and contact between different groups of people are central in the Diversity Theory. Social identity is based on the behaviour, positions and roles that belong in social categories. Individuals take their social identity from the social categories that they claim for themselves (Tsui *et al.,* 1995).

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CHAPTER 6

WORK FUNCTIONING IN PERSONS WITH DEPRESSIVE AND ANXIETY DISORDERS: THE ROLE OF SPECIFIC PSYCHOPATHOLOGICAL CHARACTERISTICS

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Abstract

Background: Depressive and anxiety disorders affect work functioning and cause high labour costs.

Aims: To examine and compare psychopathological characteristics of depressive and anxiety disorders in their effect on work functioning.

Method: In 1876 working participants of the Netherlands Study of Depression and Anxiety (NESDA) associations of presence, severity, comorbidity, duration and type of CIDI/DSM-IV anxiety and depressive disorders with both absenteeism (< 2 weeks and > 2 weeks) and work performance (reduced and impaired) were assessed.

Results: Current depressive disorder was associated with an odds of 7.10 (95% CI: 5.16 – 9.79) for >2 weeks work-absence and 5.67 (95% CI: 4.08 – 7.89) for impaired work performance, while current anxiety disorder was associated with an odds of 1.84 (95% CI: 1.39 – 2.43) and 2.13 (95% CI: 1.60 – 2.83) respectively. Even when persons were recovered from depressive and anxiety disorders, they still had a higher risk of poor work functioning. Comorbidity, chronic depressive disorder, the GAD anxiety subtype, and more severity of both anxiety and depressive disorder were associated with higher odds of absenteeism and decreased work performance.

Conclusion: Anxiety disorders have significant negative impact on work functioning, although smaller than the effect of depressive disorders. Comorbidity, severity, type and duration of the disorder, differentiate the risk of poor work functioning.

Work functioning in persons with depressive and anxiety disorders: The role of specific psychopathological characteristics

Introduction

Anxiety and depressive disorders are common disorders (Alonso et al., 2004) that have major impact on functioning in daily life, and interfere with working and productivity (Stewart et al., 2003; Kessler & Frank, 1997; Adler et al., 2006; Lim et al., 2000; O'Neill et al., 2008). Depressive and anxiety disorders are associated with the highest productivity-loss related costs of all chronic illnesses (Druss et al., 2000; Buist-Bouwman et al., 2005; Verow & Hargreaves, 2000; Glozier, 2002). Working individuals with depressive and anxiety disorders not only have more absenteeism from work than their healthy counterparts, they also report lower productivity due to decreased work performance while working (Stewart et al., 2003; Adler et al., 2006; Kessler & Frank, 1997; Goetzel et al., 2004).

Work-absenteeism and decreased work performance may depend on specific psychopathological characteristics, however not much is known yet about which characteristics are most important. Since not many studies have been able to compare the impact of depressive and anxiety disorder on work functioning, it is unknown whether there are really differences or mainly similarities in work function. Other aspects, such as severity of disorders (Wang et al., 2006), co-morbidity (De Graaf et al., 2004), chronicity (Saarni et al., 2007) and types of disorders (Lim et al., 2000), may also further determine the impact of depressive or anxiety disorders on work functioning, but have hardly been examined in a thorough way.

Insights in which specific psychopathological characteristics are risk factors for absenteeism and decreased work performance, may provide opportunities for preventive strategies for prolonged absenteeism and productivity loss among workers with depressive and anxiety disorders. Therefore, this study examines the association of detailed characteristics of depressive and anxiety disorders with work functioning (both absenteeism and decreased work performance) in a large sample, using data from NESDA (the Netherlands Study of Depression and Anxiety). We will examine and compare the impact of depressive and anxiety disorders on work functioning, and will explore the differential role that severity, co-morbidity, type and duration may play in the link between depression and anxiety disorders with work function.

Methods

Study sample

NESDA is a multi site naturalistic cohort study (n= 2981, age 18 – 65 years) examining the long-term course and consequences of depressive and anxiety disorders. Participants with and without depressive and/or anxiety disorders were recruited in the general population, in general practice and in mental health organizations. For rationale, objectives and methods of NESDA see Penninx et al., 2008 (Penninx et al., 2008). The Composite International Diagnostic Interview (CIDI, lifetime version 2.1), was used to diagnose depressive and anxiety disorders based on DSM-IV criteria. For this study, we selected participants with a paid job of more than 8 hours a week (n=1883) of whom 7 persons were excluded due to missing information about work functioning. This resulted in a sample of 1876 (673 male, 1203 female).

Work functioning

Work functioning was conceptualized in terms of absenteeism and impaired work-performance, both assessed with the Health and Labour Questionnaire Short Form (SF-HLQ) (Hakkaart-Van Roijen, 2002). The variable work absenteeism was computed by dividing the number of days absent during the last six months by the number of workdays a person was supposed to work in the last six months, expressing the number of workweeks absence in the last 6 months. This variable did not meet normality assumptions, and was categorized as before (Uegaki et al., 2007) into three categories: no absenteeism, short-term absenteeism (<2 weeks in last 6 months) and long-term absenteeism (>2 weeks in last 6 months). With these categories, a distinction was made between short-term absenteeism that could also be due to rather common health conditions (e.g. colds, flu) and the more long-term absenteeism that is likely due to more chronic conditions and involves higher costs. Decreased work performance was based upon the number of days the respondent worked while hindered by health problems during the last six months and the efficiency at work during these days rated by the respondent on a 10-point scale (0.0= maximally inefficient, 1.0 = efficient as usual) (Hakkaart-Van Roijen, 2002), computed by the next formula:

$$\frac{\text{\# days hindered} * (1 - \text{efficiency}) * \text{\# work hours per day}}{\text{\# work hours per week}} = \text{decreased work performance}$$

in which a higher rate indicates more impairment. For example decreased work performance rate of a person working 8 hours a day, 40 hours a week, who reported 10 days hindered in the past 6 months, and 0.0 at the efficiency scale, is 10*(1-0.0)*8 /40 = 2, and the decreased work performance rate of someone working 8 hours a day, 40 hours a week, who reported 25 days hindered, and 0.8 at the efficiency scale, is 25*(1 – 0.8)*8 / 40 = 1. This variable had a range from 0 to 39.8 and did not meet normality assumptions. Therefore, we created a categorical variable, which had, in line with the variable for absenteeism, three categories (0= no impairment, 1= reduced work-performance (>0 and <1.68, highest quartile) and 2 = impaired work-performance (>1.68, highest quartile)).

Depression and Anxiety diagnoses

Diagnoses of depressive and anxiety disorders according to DSM-IV criteria were assessed using the CIDI lifetime interview, version 2.1 (WHO 1997), by trained clinical staff. We used current (in the last 6 months) as well as remitted (lifetime non-current) diagnoses of depressive disorders (major depressive disorder and dysthymic disorder) and anxiety disorders (Social Phobia, Panic Disorder (with or without agoraphobia) and Generalized Anxiety Disorder (GAD)). Severity of anxiety symptoms was assessed by the Beck Anxiety Inventory (BAI, (Beck et al., 1988)) and categorized into normal (score < 10), mild (10-18), moderate (19-29) and severe (≥30)(Rush, 2000). We also used scores of the Inventory for Depressive Symptomatology (IDS) Questionnaire (Rush et al., 1996) to define severity of depressive symptoms. IDS scores were categorized into four categories: normal (score ≤ 13), mild (score 14 – 25), moderate (score 26 – 38), and severe symptoms (score ≥ 39) (Rush et al., 2003). Co-morbidity between depressive and anxiety disorders – which could be considered an additional severity indicator – was examined by creating a current depressive*current anxiety disorder interaction term. Chronicity of depressive and anxiety disorders was assessed by the Life chart (Wiersma et al., 2008) which determines through a calendar method the chronicity of depressive and anxiety symptoms in the previous four years. As done before (Wiersma et al., 2008), a dichotomous chronicity variable was constructed categorized as at least 24 months of reported depressive or anxiety symptoms in the previous four years or not.

Confounding variables

Possible confounding variables were sex, age, education (in years attained), the number of working hours a week and the number of somatic conditions consisting of a count of reported heart diseases, diabetes, stroke, arthritis, cancer, hypertension, intestinal problems, liver disease, epilepsy, chronic lung problems, allergy and injuries.

Table 1. Baseline characteristics in total sample and according to depressive and anxiety disorder status among 1876 working men and women

	No depressive or anxiety disorder (n=432)	Depressive or anxiety disorder (n=1444)	p-value*
Socio-demographics:			
Sex, % female	59.3	65.6	.02
Age, mean in years (SD)	40.8 (12.9)	41.3 (11.2)	.43
Education, mean in years (SD)	13.3 (3.1)	12.4 (3.3)	<.001
Working hours, mean hours (SD)	32.1 (10.1)	31.1 (10.5)	.09
Number of somatic conditions (SD)	1.0 (1.1)	1.3 (1.2)	<.001
Work absenteeism, median (IQR)	0.0 (0.5)	0.7 (4.0)	<.001
Work absenteeism, %:			<.001
No absence	67.4	38.1	
< 2 weeks absence	22.0	30.5	
> 2 weeks absence	10.6	31.4	
Work performance rate, median (IQR)	0.0 (0.2)	0.3 (2.4)	<.001
Work performance rate, %:			<.001
No changed work performance	67.4	44.3	
Reduced work performance	24.3	25.7	
Impaired work performance	8.3	30.0	
Severity of depressive symptoms (IDS scores), %:			<.001
Normal(0-13)	79.9	24.9	
Mild (14-26)	16.7	31.5	
Moderate (26-39)	2.5	28.0	
Severe (≥ 39)	0.2	14.1	
Severity of anxiety symptoms (BAI scores), %:			<.001
Normal (0-10)	90.3	46.1	
Mild (11-18)	8.3	27.4	
Moderate (19-29)	1.4	18.5	
Severe (≥ 30)	0.0	8.0	
Psychiatric disorders , % :			
Current Depressive Disorders:	-	47.6	
Current Major Depressive Disorder	-	46.5	
Current Dysthymic Disorder	-	10.2	
Chronic Depressive Disorder	-	11.8	
Remitted Depressive Disorder:	-	37.1	
Current Anxiety Disorders:	-	53.8	
Current Panic Disorder	-	35.4	
Current Generalized Anxiety Disorder	-	18.5	
Current Social Phobia	-	26.9	
Chronic Anxiety	-	24.2	
Remitted Anxiety Disorder:	-	20.9	
Comorbid current depressive and anxiety disorders:	-	29.8	

*t-tests for continuous variables, chi-square tests or Mann Whitney U tests for categorical variables

Statistical Analyses

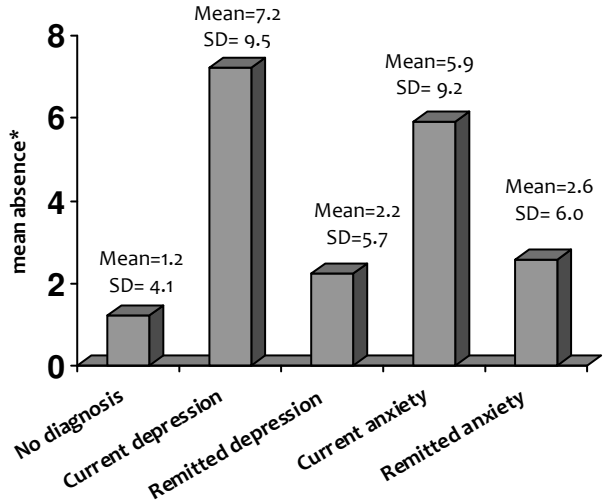
Differences between participants with and without psychopathology in socio-demographics and somatic health were examined by t-tests for continuous variables and with chi-square tests for categorical variables, and differences in absenteeism and decreased work performance were examined by Mann-Whitney U tests. With multinomial logistic regression analyses, we tested associations of socio-demographic characteristics, somatic health and diagnoses of anxiety and depression with categories of work absenteeism and decreased work performance. The models were adjusted for sex, age, education, number of working hours and number of somatic conditions. Because persons with high absence have fewer days left during which their work-performance could be affected, absence (in weeks, as a continuous variable), was added as confounding variable in models with decreased work performance as dependent variable. In models for absenteeism, odds ratios and 95% confidence intervals were calculated for short-term and long-term work absenteeism (< 2 weeks and > 2 weeks) compared to no absenteeism (reference), and in models for decreased work performance, odds ratios and 95% confidence intervals were calculated for reduced and impaired work-performance compared to no changed work-performance (reference). Subsequently, we explored the importance of severity, chronicity, type and comorbidity of anxiety and depressive disorders for the odds of long-term absence (>2weeks) and impaired work-performance in models adjusted for sex, age, education, number of working hours and number of somatic conditions

Results

Sample description

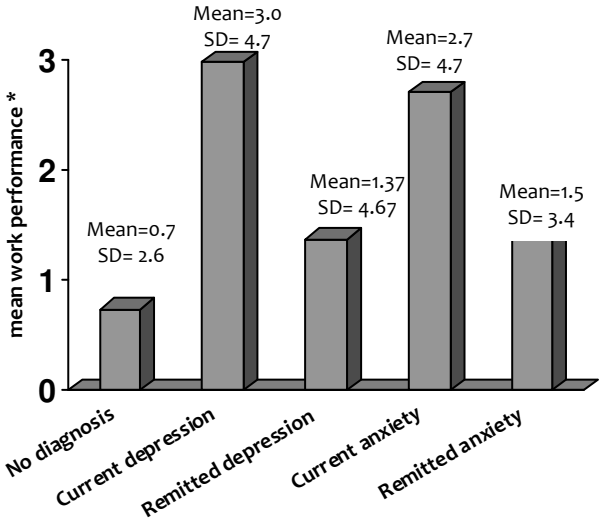
In this sample of 1876 men and women, 432 (23.0%) persons were free of any lifetime diagnoses of anxiety or depressive disorders. Compared to persons without psychopathology, those with psychopathology were more likely to be female (65.6% versus 59.3%, p=.02), lower educated (12.4 versus 13.3 years, p<.001), tended to work less hours a week (31.1 versus 32.1 hours, p=.09) and reported more somatic conditions (1.3 versus 1.0, p<.001). Moreover, persons with psychopathology had more work absenteeism (p<.001) and more decreased work performance (p<.001) than persons without psychopathology (see Table 1). Of the 1444 persons with psychopathology, 47.6 % had a current depressive disorder, 53.8 % had a current anxiety disorder, and 29.8% had a comorbid current depressive and anxiety disorder. As shown in Figure 1a, absence rates were high among participants with current diagnoses of depressive and anxiety disorders. Participants with a current depressive disorder (n=688) had a mean

absence from work of 7.2 workweeks during the last 6 months, and the mean absence of participants with current anxiety (n= 777) disorders was 5.9 workweeks. On the contrary, participants without psychopathology (n=432) had a mean absence of 1.2 weeks in the last 6 months. Also remitted diagnoses of depression and anxiety disorders involved high rates of absenteeism (mean weeks = 2.2 and 2.6 respectively). Similarly, participants with depressive and anxiety disorders reported more decreased work performance while working, and again those with current depressive disorders seemed to have the highest rates of decreased work performance (mean = 3.0 compared to 0.7 among persons without psychopathology, Figure 1b).



*mean number of weeks absent from work in the last 6 months

Figure 1a. Psychopathology and absenteeism



* mean work-performance rate while working in the last 6 months

Figure 1b. Psychopathology and decreased work performance

Associations between depressive and anxiety disorders with work functioning

In a multivariable nominal logistic regression model, adjusted for somatic diseases and socio-demographics, particularly current depressive disorders seemed important for work absenteeism (Table 2). Having a current depressive disorder was associated with both higher odds of short-term absenteeism (OR= 2.51; 95% CI: 1.87 – 3.37) and particularly long-term absenteeism (OR = 7.10; 95%CI: 5.16 – 9.76). Even remitted diagnoses of depressive disorders were significantly associated with absenteeism (short-term absenteeism: OR= 1.69 (95% CI: 1.298 – 2.24)); long-term absenteeism OR=1.60 (95% CI: 1.13 – 2.27). In a multivariable analysis, the associations of anxiety disorders with absenteeism were less prominent than those of depressive disorders. The odds of current anxiety disorders for short-term and long-term absenteeism were 1.43 (95% CI: 1.10 – 1.86) and 1.84 (95% CI: 1.39 – 2.43) respectively, but remitted anxiety disorders were not significantly associated with absence from work.

Anxiety disorders did also significantly decrease work performance in multivariable analyses. The OR of current anxiety disorders for reduced and impaired work performance was 1.47 (95% CI: 1.12 – 1.93) and 2.13 (95% CI: 1.61 – 2.83), respectively, and remitted anxiety disorders tended to be associated with reduced work performance (OR= 1.39; 95% CI: 0.99 – 1.95) and was significantly associated with an increased risk of impaired work performance (OR= 1.57; 95% CI: 1.08 – 2.29). Nevertheless, in line with the results for work absenteeism, current depressive disorders were even more pronouncedly associated with decreased work performance. Having a current diagnosis of depressive disorder was also associated with reduced work performance (OR= 1.90; 95% CI: 1.39 – 2.61) and with impaired work performance (OR= 5.67; 95% CI: 4.08 – 7.89). The OR of remitted depressive disorders was 1.54 (95% CI: 1.15 – 2.05) for reduced work performance and 1.67 (95% CI: 1.18 – 2.36) for impaired work performance. Sex, age, number of working hours and somatic health were also associated with absenteeism and decreased work performance, and education was associated only with absenteeism.

In order to examine whether the impact of depressive disorder on work functioning is indeed significantly larger than that of anxiety disorder, we directly compared participants with depressive and anxiety disorders. Figure 2a and 2b show that compared to those with current depressive disorders, pure current and anxiety disorders as well as remitted depressive or anxiety disorders were associated with significantly lower risks for long-term absence. Persons with comorbid current anxiety and depressive disorders had no significantly higher risks for long-term absenteeism or impaired work performance than persons with pure current depressive disorders.

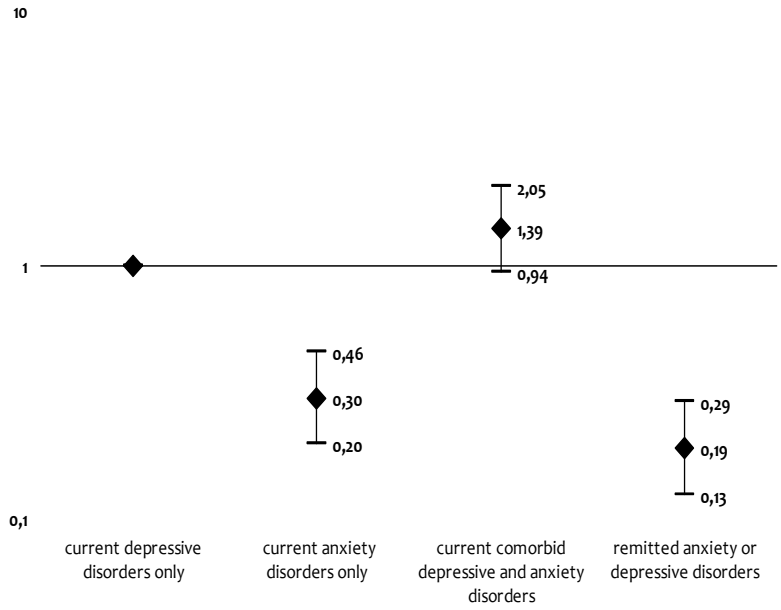


Figure 2a. The OR (95% CI) of diagnoses of anxiety and depressive disorders for absenteeism >2weeks (n=1444)

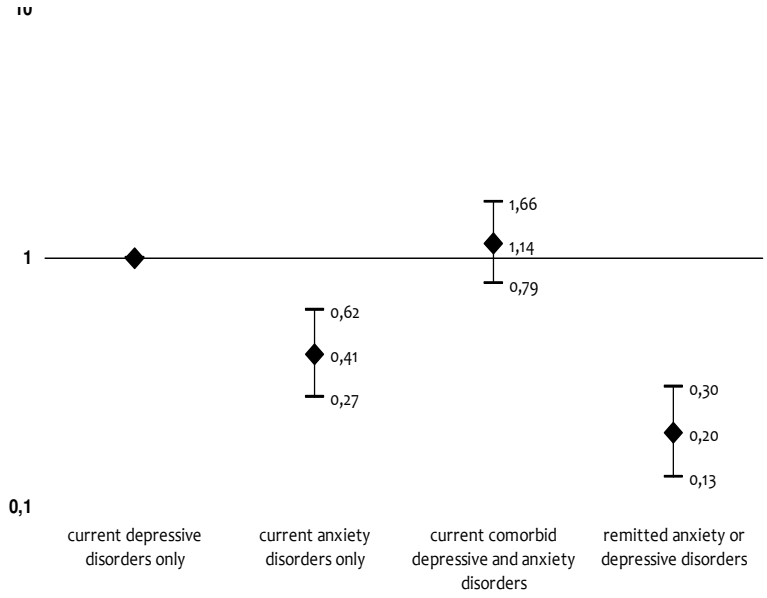


Figure 2b. The OR (95% CI) of diagnoses of anxiety and depressive disorders for impaired performance (n=1444)

Table 2. Multivariate associations of psychopathology with work absenteeism and decreased work performance[1] (n=1876)

	Absenteeism[2]				Decreased work performance[3]			
	<2 weeks		>2 weeks		Reduced		Impaired	
	OR (95% CI)	p-value	OR (95% CI)	p-value	OR (95% CI)	p-value	OR (95% CI)	p-value
Socio-demographics								
Sex (1=female)	1.74 (1.34 – 2.26)	<.001	1.32 (0.99 – 1.74)	.06	1.00 (0.77 – 1.31)	.99	0.73 (0.56 – 0.97)	.03
Age	0.98 (0.97 – 0.99)	<.001	1.00 (0.99 – 1.01)	.80	0.97 (0.96 – 0.98)	<.001	0.99 (0.98 – 1.00)	.07
Education	1.02 (0.98 – 1.05)	.42	0.96 (0.92 – 1.00)	.03	1.01 (0.97 – 1.04)	.75	0.98 (0.94 – 1.02)	.25
Working hours	1.01 (1.00 – 1.03)	.02	1.01 (1.00 - 1.02)	.13	1.01 (1.00 – 1.03)	.04	1.00 (0.99 – 1.01)	.98
Absence ratio					0.91 (0.89 – 0.93)	<.001	0.94 (0.93 – 0.96)	<.001
Nr. of somatic conditions	1.05 (0.95 – 1.16)	.33	1.16 (1.05 – 1.29)	.004	1.20 (1.08 – 1.34)	<.001	1.37 (1.23 – 1.51)	<.001
Psychopathology								
Current depressive disorder	2.51 (1.87 – 3.37)	<.001	7.10 (5.16 – 9.76)	<.001	1.90 (1.39 – 2.61)	<.001	5.67 (4.08 – 7.89)	<.001
Remitted depressive disorder	1.69 (1.28 – 2.24)	<.001	1.60 (1.13 – 2.27)	.008	1.54 (1.15 – 2.05)	.003	1.67 (1.18 – 2.36)	.004
Current Anxiety disorder	1.43 (1.10 – 1.86)	.007	1.84 (1.39 – 2.43)	<.001	1.47 (1.12 – 1.92)	.006	2.13 (1.60 – 2.83)	<.001
Remitted Anxiety disorder	1.30 (0.94 – 1.80)	.12	1.16 (0.79 – 1.70)	.45	1.39 (0.99 – 1.95)	.05	1.57 (1.08 – 2.29)	.02

1. Covariables were sex, age, education, working hours, number of somatic conditions and in the model with decreased work performance as dependent variable also absence was a covariable.
2. Reference category is 'no absence'.
3. Reference category is 'no changed work-performance'.

Table 3. Multinomial associations of depression and anxiety characteristics with long-term absenteeism and impaired work-performance in a sub-sample of persons with current diagnoses of depressive and anxiety disorders[1] (n=1035)

	≥2 weeks absence [2]		Impaired work performance[3]	
	OR (95%CI)	p-value	OR (95%CI)	p-value
Psychiatric diagnosis:				
Anxiety disorder	Ref		Ref	
Depressive disorder	4.12 (2.93– 5.80)	<.001	2.84 (2.02 – 4.00)	<.001
Comorbid anxiety and depression:				
Pure disorder	Ref		Ref	
Comorbid disorder	2.71 (1.99 – 3.70)	<.001	1.96 (1.43 – 2.69)	<.001
Type of depressive disorders[4]:				
MDD	Ref		Ref	
Dysthymia	1.14 (0.73 – 1.77)	.57	1.29 (0.84 – 1.99)	.25
Type of anxiety disorders[5]:				
Panic disorder	Ref		Ref	
GAD	1.77 (1.22 – 2.55)	.002	1.48 (1.03 – 2.12)	.03
Social Phobia	1.27 (0.90 – 1.79)	.17	1.35 (0.96 – 1.90)	.09
Symptoms of depression (IDS-scores):				
Normal	Ref		Ref	
Mild	0.80 (0.48 – 1.32)	.38	1.95 (1.14 – 3.33)	.02
Moderate	1.90 (1.16 – 3.13)	.01	3.78 (2.22 – 6.44)	<.001
Severe	4.90 (2.75 – 8.74)	<.001	3.99 (2.22 – 7.17)	<.001
Symptoms of anxiety (BAI-scores):				
Normal	Ref		Ref	
Mild	1.34 (0.93 – 1.95)	.12	1.28 (0.89 – 1.86)	.19
Moderate	1.69 (1.13 – 2.53)	.01	1.68 (1.12 – 2.52)	.01
Severe	2.74(1.56 – 4.81)	<.001	1.51 (0.90 – 3.51)	.12
Chronic depression:				
No	Ref		Ref	
Yes	1.47 (1.02 – 2.12)	.04	1.37 (0.95 – 1.96)	.09
Chronic anxiety:				
No	Ref		Ref	
Yes	0.85 (0.62 – 1.16)	.31	1.05 (0.77 – 1.44)	.76

1. Adjusted for sex, age, education, working hours, number of somatic conditions and in the model with decreased work performance as dependent variable also adjusted for absence.
2. Reference category is 'no absence', category 'absence < 2 weeks' not shown.
3. Reference category is 'no changed work performance', category 'reduced work performance' not shown.
4. Also adjusted for current anxiety disorders.
5. Also adjusted for current depressive disorders.

Specific depression and anxiety characteristics

In additional analyses among participants with current psychopathology (n=1023), we examined the importance of types of depressive and anxiety disorders, severity of symptoms, chronicity and comorbidity of depressive and anxiety disorders for long-term absenteeism and impaired work-performance adjusting for socio-demographics and somatic health (Table 3). In univariable analyses, depressive disorders had higher odds for long-term absenteeism (OR= 4.12; 95% CI: 2.93 – 5.80) and impaired work performance (OR=2.84; 95% CI: 2.02 – 4.00).

Comorbidity of anxiety and depressive disorders was also associated with higher odds for long-term absenteeism (OR= 2.71; 95%CI: 1.99 – 3.70) and impaired work performance (OR=1.96 95%CI: 1.43 – 2.6), but dysthymic disorders showed no higher odds for long-term absenteeism and impaired work performance than major depressive disorders in univariable analyses. Compared to panic disorders, GAD was associated with higher odds for long-term absenteeism (OR=1.77; 95%CI: 1.22 – 2.55) and impaired work performance (OR= 1.48; 95% CI: 1.03 – 2.12) and social phobia tended to have higher odds for impaired work performance (OR= 1.35; 95% CI: 0.96 – 1.90), but not for long-term absence. Higher severity of depressive symptoms (IDS-scores) was significantly associated with higher odds of long-term absenteeism and impaired work performance, showing a dose response effect. Higher severity of anxiety symptoms was also associated with higher odds of long-term absence but not consistently with impaired work performance. Furthermore, chronic depressive disorders, but not chronic anxiety disorders, showed higher odds for long-term absence (OR=1.47; 95% CI; 1.02 – 2.12) and a tendency for impaired work performance (OR = 1.37; 95 CI: 0.95 – 2.96).

Discussion

The results of the present study confirm the association between psychopathology and work functioning among working people. Current depressive disorders were associated with a seven-fold higher risk of long-term absence and five-fold higher risk of impaired work performance, whereas current anxiety disorders increased odds for long-term absence and impaired work-performance with approximately a factor two. Persons with remitted depressive disorders had both more absenteeism and decreased work performance, whereas those with remitted anxiety disorders had decreased work performance, but not more work absence. In line with a dose-response association, a higher severity of depressive symptoms was importantly associated with more work long-term absenteeism and more impaired work performance. In addition, comorbidity between depression and anxiety, as well as chronic depressive disorders and -within the anxiety cluster -the generalized anxiety disorder were specific psychopathological characteristics associated with elevated risks of poor work functioning.

The high odds of depressive disorders and depressive severity for long-term absenteeism and impaired work performance confirm high labour costs caused by mental disorders. The economic impact of both anxiety and depressive disorders has repeatedly been shown to enormous (Druss et al., 2000; Stewart et al., 2003). It has been shown that in the 18 – 65 age

bracket, 80% of the economic costs are due to the loss of working productivity of persons with depressive or anxiety disorders (Smit et al., 2006). In a recent study among employees of a large US information technology firm, depressive disorders accounted for 20%, and comorbid depression, anxiety and sleep problems even for 40% of the annual lost productivity costs in the firm (Kessler et al., 2008).

Although the presence of a current anxiety disorder had a significant impact on work functioning, its impact was relatively smaller than that of depressive disorders. Even though anxiety and depressive disorders have many common characteristics, they also have distinct features that may differentially affect work functioning. Depressive disorders, more than anxiety disorders, involve sleeping problems, low energy level and poor concentration that may disturb overall work functioning. A core characteristic of anxiety disorders is avoidance of triggering situations. Some anxious people might be able to avoid possible triggers at work, by creating a predictable workplace or keeping away from crowded places or social situations, which therefore lead them to have a rather functional work environment. On the other hand, indications are found that adaptive behaviour may result in career perspectives that are beneath one's abilities, particularly among persons with social anxiety (Wittchen et al., 2000). Moreover, anxiety disorders often go hand in hand with depressive symptoms (Levine et al., 2001) and persistent anxiety disorders are risk factors for developing depressive disorders (Hettema et al., 2003; De Graaf et al., 2004). Therefore, also anxiety disorders considerably impact work functioning in a negative way, causing high labour costs for employers due to lost productivity, as well as for employees themselves due to decreased career perspectives. Moreover, severity of anxiety symptoms showed a dose response effect on long-term absence.

Beside current anxiety disorders and current depressive disorders, even remitted depressive disorders are related with more absenteeism and impaired work performance. This may indicate that depressive disorders in remission have scar effects, or that underlying subthreshold symptoms remain present. In previous studies, psychosocial (Coryell et al., 1993; Wells et al., 1989) and cognitive (Nakano et al., ; Paelecke-Habermann et al., 2005) deficits after depressive episodes were found, indicating scarring effects of depressive disorders which may affect work functioning. However, a recent study has shown that improvement of depressive symptomathology was positively correlated with improvement of executive functioning (Biringer et al., 2005). Other studies found scarring effects in psychosocial disability among especially the severe recurrent depressive disorders (Ormel et al., 2004), and described that people continue to recover from depressive disorders for many years (Mueller et al., 1996), further illustrating that many persons with remitted depressive disorders may still have underlying subthreshold symptoms that may impact work functioning.

The NESDA study provided a unique opportunity to examine and compare the association of anxiety and depressive disorders, their severity, chronicity and comorbidity with both absenteeism and decreased work performance, among a very large sample of people with diagnosed anxiety and depressive disorders. Nevertheless, there are some limitations of this study that we need to keep in mind. Work functioning was based upon cross-sectional data. Consequently, it is impossible to draw any conclusions about the exact causality of the reported associations. It is possible that depressive disorders contributed to work absenteeism and decreased work performance; however, it is also possible that unfavourable work circumstances have contributed to development of psychopathology. Moreover, absenteeism and decreased work performance measures were based upon self-reported and not employer-based data, which may have biased by the effect of depressive or anxiety symptoms. However, other studies showed that self-reported measurement of absenteeism and decreased work performance highly correlate with employer payroll records (Kessler et al., 2003). Further longitudinal explorations of the association between work functioning and psychopathology is necessary, and can give insight about long-term economic consequences of depressive and anxiety disorders for work productivity, and individual career outcomes. On the other hand, this study contributes to the awareness of the importance of anxiety and depressive disorders and their specific characteristics for functioning at work. In prevention of long–term absence and impaired work-performance, prevention, the awareness of the differentiated effect of specific characteristics such as severity, duration, type of disorder, comorbidity for poor work function, and even an elevated risk of poor work functioning among employees with remitted disorders, is important. For employers, investment in mental health promotion may create opportunities to reduce productivity-loss related costs.

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CHAPTER 7

DEPRESSIVE AND ANXIETY DISORDERS ON-THE-JOB: DO JOB CHARACTERISTICS CONTIBUTE TO GOOD WORK FUNCTIONING IN PERSONS WITH AND WITHOUT DEPRESSIVE AND ANXIETY DISORDERS?

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Abstract

Background: This study examined the importance of job characteristics on two measures of work functioning (absence and on-the-job performance) among working people with and without depressive and anxiety disorders.
Method: In a sample of 1416 working subjects participating in NESDA (Netherlands Study of Depression and Anxiety, N= 2981) with or without DSM-IV CIDI depressive and anxiety disorders, we examined associations between job characteristics and work functioning in multinominal logistic regression models, adjusting for socio-demographics, and somatic health. Work functioning was measured by two categorical variables, respectively absenteeism (no absenteeism, < 2 weeks and ≥ 2 weeks) and decreased work performance (not impaired, reduced, impaired). Job characteristics were working hours, psychosocial working conditions (job demands, job control and job support) and occupational status.
Results: In a model with current and remitted depressive and anxiety disorders, job control and job support were associated with lower odds of ≥ 2 weeks absenteeism (OR=0.41 (95%CI:0.19-0.90) and OR=0.44 (95%CI:0.25-0.76) respectively) and impaired work performance (OR=0.48 (95%CI:0.23-1.02) and OR=0.60 (95%CI:0.35-2.02) respectively). Self employed workers and skilled manual workers had lower odds of impaired work performance (OR=0.36 (95%CI:0.16-0.87) and OR=0.32 (95%CI:0.15-0.68) respectively)
Conclusion: Psychosocial working conditions and occupational status were partially related to work absenteeism and work-performance. Particularly high job support, high job control and reduced working hours are job characteristics that may improve work functioning among workers with and without psychopathology.

Depressive and anxiety disorders on-the-job: Do job characteristics contribute to good work functioning in persons with and without depressive and anxiety disorders?

Introduction

Many workers with depressive and anxiety disorders have problems with functioning at work. Workers with depressive or anxiety disorders have more absence from work and a poorer on-the-job work performance (Kessler & Frank, 1997; Verow & Hargreaves, 2000; Druss et al., 2000; Stewart et al., 2003) Plaisier et al, submitted). Job characteristics, such as occupational status and psychosocial working conditions may be related with work functioning (Marklund et al., 2008; Bockerman & Ilmakunnas, 2008), particularly among persons with depressive and anxiety disorders. Poor job characteristics may worsen someone's work functioning whereas favourable job characteristics may improve functioning at work. Since workers with anxiety and depressive disorders are at a substantially increased risk for poor job functioning, it is particularly important to know whether their job functioning could be modified by favourable job characteristics.

Not much is known yet about specific job characteristics improving work functioning among workers with depressive and anxiety disorders, but much literature describes the relationship of job characteristics with work functioning and mental health problems in a general working population. Occupational status of a job has shown to be associated with work functioning and mental health: compared to persons in low graded jobs, for persons in higher graded jobs absence rates are lower (Christensen et al., 2008) and mental health is better (Llena-Nozal et al., 2004). Workers in skilled or managerial positions versus unskilled workers and non-manual versus manual jobs may vary in psychosocial characteristics. According to the Job Demand Control/Support Model (Karasek & Theorell, 1990; Johnson & Hall, 1988), high job demands and low control over tasks and low support by colleagues, are related with psychological strain and have shown a risk factor for developing depressive disorders (Stansfeld et al., 1999; Plaisier et al., 2007; Bonde, 2008). In addition, lower control and support at work have been associated with more absenteeism (North et al., 1996; Melchior et al., 2003) as well as poorer work performance (Sargent L.D. & Terry D.J., 1998). Higher job demands might be a trigger for more sickness absence among workers with depressive disorders, since particularly these workers have time management deficits (Adler et al., 2006). On the other hand, high job control and high support at work may be job characteristics that can help particularly workers with depressive or anxiety disorders to

adapt their work environment to their needs and may therefore help avoid poor performance and absenteeism. Since depressed and anxious subjects are at an highly enlarged risk for poor job functioning, favourable job resources could especially for this group act as a buffering factor augmenting the negative consequences of psychopathology on job functioning. Beside occupational status and psychosocial work characteristic, also the number of working hours may be important for mental health and work functioning (Sparks et al., 1997). A high number of working hours may increase job strain and decrease possibilities to recover from job strain.

The present study examines the impact of job characteristics on work functioning in a large sample of workers with and without diagnosed depressive and anxiety disorders. By examining interaction effects of job characteristics with anxiety and depressive disorders, we will explore whether effects of job characteristics are particularly favourable for job functioning among workers with depressive and anxiety disorders. The advantage of this study is the unique possibility to examine the importance of occupational status, psychosocial working conditions (job demands, job control and job support) and the number of working hours for two measures of work functioning (absenteeism and on-the-job performance).

Methods

Research population

NESDA is a multisite naturalistic cohort study (n= 2981, age 18 – 65 years) examining the long-term course and consequences of depressive and anxiety disorders. The study has been designed to be representative of persons with depressive and anxiety disorders in different health care settings and stages of the developmental history. Participants with no symptoms of disorders, those with earlier episodes and those with current depressive or anxiety disorders were recruited in the general population, in general practice and in mental health organizations. For rationale, objectives and methods of NESDA see (Penninx et al., 2008). The Composite International Diagnostic Interview (CIDI, lifetime version 2.1), was used to diagnose depressive and anxiety disorders according to the Diagnostic and Statistical Manual of mental disorders, (DSM-IV). A self-report questionnaire, measuring amongst others Psychosocial working conditions was filled out by 2624 respondents (response = 88.0%).

Of the NESDA population, we selected 1726 persons who had a paid job for more than 8 hours a week. Of them, 1522 persons (536 men and 986 women) had filled out the psychosocial work characteristics questionnaire and consisted the sample of this study. Non-response was not associated with sex, number of somatic diseases or absenteeism. However,

non-responders were younger (mean age 37.2 versus 41.5 years, p<.001), had more psychopathology (67.7 versus 49.9% had a current depressive or anxiety disorder, p<.001), more working hours (33.0 versus 31.2, p=0.02) and higher mean work performance impairment (23.7 versus 13.2, p=.002).

Work functioning

Work functioning was conceptualized in terms of absenteeism and of impaired work-performance, both assessed by the Health and Labor Questionnaire Short Form (SF-HLQ, van Roijen et al., 1996; Goetzel et al., 2004). The variable work absenteeism was computed by dividing the number of days absent during the last six months by the number of workdays per week. This variable did not meet normality assumptions, and was categorized into three categories: no absenteeism, short-term absenteeism (< 2 weeks) and long-term absenteeism (≥ 2 weeks). With these categories a distinction was made between short-term absenteeism due to more general diseases such as common cold or flu, and long-term absenteeism, indicating more chronic conditions and probably high costs. Work performance was based upon the number of days the respondent worked while hindered by health problems during the last six months and the efficiency at work during these days rated by the respondent on a 10-point scale (0.0 maximally inefficient, 1.0 = efficient as usual) (Hakkaart-Van Roijen, 2002), computed by the next formula:

$$\frac{\text{\# days hindered} * (1 - \text{efficiency}) * \text{\# work hours per day}}{\text{\# work hours per week}} = \text{Work Performance}$$

in which a higher rate indicates more impairment. For example, the impaired work performance rate of someone working 8 hours a day, 40 hours a week, who reported 10 days hindered, and 0.0 at the efficiency scale, is 10*(1-0.0)*8 /40 = 2, and the impaired work performance rate of someone working 8 hours a day, 40 hours a week, who reported 25 days hindered, and 0.8 at the efficiency scale, is 25*(1 – 0.8)*8 / 40 = 1. This variable had a range from 0 to 36 and did not meet normality assumptions. Therefore, we created a categorical variable, which had, in line with the variable for absenteeism, three categories (0= no impairment, 1= reduced performance (>0 and <1.80, highest quartile) and 2 = impaired performance (>1.80, highest quartile)).

Psychopathology

Diagnoses of depressive and anxiety disorders according to DSM-IV criteria were assessed by the CIDI lifetime interview, version 2.1 (WHO 1997), assessed by trained and monitored

interviewers. Since current and remitted diagnoses of depressive and anxiety disorders are associated with work functioning (Plaisier et al., submitted), we defined psychopathology as no diagnosis, current diagnoses (in the past 6 months) or remitted (lifetime but not in past 6 months) diagnoses of depressive disorders (major depressive disorder and dysthymic disorders) and anxiety disorders (panic disorder with or without agoraphobia, social phobia and generalized anxiety disorder). Since we have not observed any differences in work functioning across anxiety subtypes (Plaisier et al. submitted), we grouped all anxiety subtypes in one anxiety disorder variable.

Job Characteristics

Measures of job characteristics are occupational status, psychosocial working conditions and working hours. An occupational status variable based on the EGP-classification (Erikson et al., 1979) was created using an occupational code (SBC-92, provided by Statistics Netherlands (CBS)) and additional self reported information on employment status and supervisory status (Bakker et al., 1997). The eleven categories of the original CBS-variable was recoded into five categories, consisting of (1) high graded non-manual workers (such as academics, managers, teachers, medical staff, n= 630) (2) medium or low skilled non-manual workers (shop assistants, care takers, secretaries, n= 494), (3) self employed (entrepreneurs, <10 employees, n= 62), (4) high skilled manual workers (technicians, hotel and catering management, cooks, car mechanics, n=64) and (5) semi or low skilled manual workers (drivers, domestic helpers, florists, n= 147). Psychosocial working conditions, consisting of job demands, job control and job support, were measured by a questionnaire that consisted of dichotomous items based on the Demands/Control model (Karasek & Theorell, 1990). Positive answers scored 1 and negative answers scored 0. Scales were computed when the number of missing values was not more than half of the number of items, by dividing the sum score by the number of items minus the number of missing values. This resulted in three scales ranging between 0 and 1. The scale job demands contained 5 items (work fast, work hard, sufficient time to do work, excessive work, conflicting demands) and its Cronbach's Alpha was 0.75. Job control contained 13 items (e.g. have freedom to plan tasks; can take a break; job requires skill; can develop skills) with a Cronbach's alpha of 0.77. Job support had a Cronbach's alpha of 0.82, and contained 8 items (e.g. good atmosphere at work, can get help, qualified management, supportive management). Furthermore, the number of working hours was asked.

Confounding variables

Since gender, age, and education (in years attained) may also be associated with working characteristics, with work functioning and anxiety and depressive disorders, these

sociodemographics were considered possible confounding variables. Also somatic health is related with work functioning and depressive and anxiety disorders, and therefore considered as a confounding variable. Somatic health was assessed by the self-reported number of somatic conditions consisting of a count of reported heart diseases, diabetes, stroke, arthritis, cancer, hypertension, intestinal problems, liver disease, epilepsy, chronic lung problems, allergy and injuries.

Statistical Analyses

Differences in socio-demographics, somatic health, and job characteristics between persons with and without psychopathology were examined by t-tests for continuous variables and with chi-square or with Mann-Whitney U tests for categorical variables (Table 1). In multinominal logistic regression models, adjusted for gender, age, education and somatic health, we computed associations of psychopathology (current and remitted depressive disorders and current and remitted anxiety disorders simultaneously), working hours, job demands, job control, job support and occupational status classification individually with work absenteeism, and subsequently in a model with all variables simultaneously (Table 2). We repeated these procedures for models with work-performance as dependent variable (Table 3). Odds ratio's and 95% confidence intervals were calculated for two categories of work absenteeism (< 2 weeks and ≥ 2 weeks) and for 2 categories of work performance (reduced and impaired) compared to no absenteeism and no impaired work performance respectively. Additionally, we created two new dichotomous variables indicating current and remitted psychopathology (anxiety and/or depressive disorder together) and computed current and remitted psychopathology*job characteristics interaction terms. Because occupational status classification subgroups are small, we recoded this variable in two dichotomous variables indicating manual jobs (versus non-manual jobs) and high skilled jobs (versus medium or low skilled jobs) and created their current and remitted psychopathology interaction terms. We tested interactions with psychopathology of each job characteristic (work hours, job demands, job control, job support, manual jobs, high skilled jobs) individually in adjusted models with psychopathology variables, the job characteristic variable and the current*job characteristic and remitted psychopathology*job characteristic interaction terms (significance level=90%).

Table 1. Socio-demographics, psychopathology and job content in a sample of 1522 working men and women

	No diagnosis (n=393)	Current diagnosis (n=767)	Remitted diagnosis (n=362)	p-value*
Socio-demographics:				
Sex (% female)	59.8	65.5	68.5	.04
Age	41.0 (12.8)	41.0 (11.1)	43.3 (11.2)	.004
Education (mean in years, SD)	13.4 (3.1)	12.4 (3.3)	13.0 (3.1)	<.001
Number of somatic conditions	1.0 (1.1)	1.3 (1.2)	1.1 (1.2)	<.001
Psychopathology:				
Depressive disorder (%)		64.0	83.4	
Anxiety disorder (%)		73.7	55.0	
Work Functioning:				
Work absenteeism (%):				<.001
No	68.4	36.2	56.4	
< 2 weeks	22.4	34.2	30.9	
> 2weeks	9.2	29.6	12.7	
Work performance (%):				<.001
Not impaired	68.4	32.7	54.1	
Reduced	23.2	29.2	30.9	
Impaired	8.4	38.1	14.9	
Working characteristics:				
Occupational status classification (%):				.002
High grade non-manual jobs	54.0	40.1	46.4	
Medium / low grade non-manual jobs	28.8	39.2	34.6	
Self employed (<10 employees)	5.4	4.5	5.6	
Skilled manual worker	3.9	5.5	4.2	
Semi / low skilled manual worker	8.0	10.8	9.2	
Psychosocial working conditions:				
Job demands (mean, SD)	0.38 (0.29)	0.42 (0.29)	0.42 (0.26)	.03
Job control (mean, SD)	0.75 (0.17)	0.66 (0.21)	0.72 (0.20)	<.001
Job support (mean, SD)	0.65 (0.26)	0.56 (0.28)	0.60 (0.27)	<.001
Working hours (mean hours, SD):	32.0 (10.3)	31.0 (10.3)	31.0 (10.8)	.15

*based upon ANOVA for continuous variables and chi-square tests or Mann-Whitney U tests for categorical variables

Results

Sample description

In this sample of 1522 men and women, 393 (25.8%) persons were free of psychopathology in the last six months (see Table 1). Of the 767 (50.4%) persons with a current diagnosis of anxiety or depressive disorder, 491 persons (64.0%) had a current (6-month) depressive disorder, 565 persons (73.6%) had a current (6-month) anxiety disorder and 289 persons (37.7%) had both a current depressive and anxiety disorder. Of the persons with a current depressive disorder, 61 (12.4%) persons had also a remitted anxiety disorder and of those with a current anxiety disorder, 160 (28.3%) persons had also a remitted depressive disorder. Among the 362 (23.8%) persons with remitted disorders only, 302 (83.4%) had a remitted depressive disorder, and 199 (55.0%) had a remitted anxiety disorder. Persons with and without current and remitted diagnoses of anxiety and depressive disorders differed in sex, age, education, and somatic health. Those without diagnoses were more likely to be male ($p=.04$), had lower numbers of somatic conditions ($p<.001$), and had the highest education ($p<.001$) and persons with remitted diagnoses had the highest mean age ($p=.004$). Persons with and without current and remitted depressive and anxiety diagnoses had prominent differences in absence and work performance rates ($p<.001$ for both), with the highest rates of long term absence and impaired performance among persons with current diagnoses. Regarding job characteristics, among persons without diagnoses of anxiety and depressive disorders high grade non-manual jobs were relatively most present, whereas among those with current diagnoses relatively more persons had medium or low grade non-manual jobs and semi or low skilled manual jobs ($p=.002$). Persons without diagnoses reported the lowest job demands (mean was 0.38 versus 0.42 among both current and remitted diagnoses, $p=.03$), the highest job control (0.75 versus 0.66 and 0.72 among current and remitted diagnoses respectively, $p<.001$) and the highest job support (0.65 versus 0.56 and 0.60 among current and remitted diagnoses respectively, $p<.001$). There was no significant difference in the number of working hours between persons with and without diagnoses.

Anxiety and depressive disorders, job characteristics, and the association with absenteeism

As shown in Table 2, current depressive disorders were associated with high odds of short-term absenteeism (OR=2.68; 95% CI: 1.95 – 3.68) and particularly long-term absenteeism (OR=6.96; 95% CI: 4.76 – 10.16). Current anxiety disorders were less prominently, although significantly, associated with higher odds of short-term absenteeism (OR=1.36; 95% CI: 1.03 – 1.81) and long-

Table 2. Associations of psychopathology and job characteristics with absence (2weeks and > 2weeks, n=1522)

	Adjusted models for testing work characteristics individually*				Adjusted models for testing work characteristics simultaneously*			
	Short-term absence (< 2weeks)		Long-term absence (> 2weeks)		Short-term absence (< 2weeks)		Long-term absence (> 2weeks)	
	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p
Psychopathology**:								
Remitted depressive disorder	1.63 (1.21 – 2.19)	.001	1.63 (1.08 – 2.46)	.02	1.57 (1.16 – 2.13)	.003	1.55 (1.02 – 2.34)	.04
Current depressive disorder	2.68 (1.95 – 3.68)	<.001	6.96 (4.76 -10.16)	<.001	2.59 (1.87 – 3.59)	<.001	6.38 (4.34 – 9.38)	<.001
Remitted anxiety disorder	1.27 (0.90 – 1.79)	.18	1.22 (0.79 – 1.88)	.37	1.26 (0.89 – 1.78)	.20	1.15 (0.74– 1.79)	.34
Current anxiety disorder	1.36 (1.03 – 1.81)	.03	1.57 (1.13 – 2.19)	.008	1.30 (0.98 – 174)	.07	1.46(1.04 – 2.05)	.03
Job characteristics:								
Occupational status classification:								
High grade non-manual jobs	Ref		Ref		Ref		Ref	
Medium / low grade non-manual jobs	1.36 (1.04 – 1.78)	.02	1.25 (0.92 – 1.69)	.15	1.35 (1.02 – 1.78)	.04	1.21 (0.87 – 168)	.26
Self employed (<10 employees)	0.74 (0.36 – 1.53)	.42	0.41 (0.16 – 1.10)	.08	0.61 (0.29 – 1.30)	.20	0.35 (0.12 – 0.98)	.05
Skilled manual worker	0.66 (0.34 – 1.29)	.23	1.26 (0.69 – 230)	.45	0.68 (0.34 – 1.34)	.27	1.27 (0.66 – 2.46)	.47
Semi / low skilled manual worker	0.87 (0.26 – 2.96)	.82	0.66 (0.11 – 3.82)	.64	0.80 (0.22 – 2.89)	.74	0.66 (0.11 – 4.19)	.66
Psychosocial working conditions:								
Job demands	0.99 (0.66 – 1.49)	.95	1.83 (1.14 – 2.93)	.01	0.78 (0.50 – 1.22)	.27	1.18 (0.69 – 1.99)	.55
Job control	0.34 (0.18 – 0.63)	.001	0.17 (0.09 – 0.33)	<.001	0.45 (0.23 – 0.87)	.02	0.41 (0.19 – 0.90)	.03
Job support	0.58 (0.38 – 0.90)	.02	0.26 (0.16 – 0.42)	<.001	0.78 (0.49 – 1.5)	.29	0.44 (0.25 – 0.76)	.003
Working hours:	1.02 (1.00 – 1.03)	.01	1.01 (0.99 – 1.02)	.30	1.03 (1.01 – 1.04)	<.001	1.01 (1.00 – 1.03)	.10

*adjusted for sex, age, education, and somatic health.

**Psychopathology characteristics were simultaneously tested in multivariable models.

Table 3. Associations of psychopathology and job characteristics with reduced and impaired work performance (n=1522)

	Adjusted models for testing work characteristics individually *				Adjusted models for testing work characteristics simultaneously *			
	Reduced work performance		Impaired work performance		Reduced work performance		Impaired work performance	
	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p
Psychopathology**:								
Remitted depressive disorder	1.61 (1.19 – 2.18)	.002	1.51 (1.03 – 2.22)	.04	1.60 (1.17 – 2.17)	.003	1.44 (0.98 – 2.12)	.07
Current depressive disorder	2.00 (1.43 – 2.80)	<.001	5.19 (3.60 – 7.49)	<.001	1.92 (1.36 – 2.71)	<.001	4.87 (3.35 – 7.06)	<.001
Remitted anxiety disorder	1.42 (0.99 – 2.02)	.06	1.84 (1.22 – 2.78)	.004	1.42 (0.99 – 2.03)	.06	1.92 (1.26 – 2.92)	.002
Current anxiety disorder	1.60 (1.20 – 2.14)	.002	2.33 (1.69 – 3.22)	<.001	1.61 (1.20 – 2.16)	.002	2.34 (1.68 – 3.25)	<.001
Job Characteristics:								
Occupational status classification:								
High grade non-manual job	Ref		Ref		Ref		Ref	
Medium/low grade non-manual job	0.91 (0.69 – 1.21)	.53	1.19 (0.89 – 1.60)	.24	0.91 (0.68 – 1.21)	.51	1.04 (0.75 – 1.42)	.83
Self employed (<10 employees)	0.70 (0.33 – 1.45)	.33	0.49 (0.20 – 1.18)	.11	0.52 (0.24 – 1.12)	.09	0.36 (0.16 – 0.87)	.03
Skilled manual job	0.52 (0.28 – 0.97)	.04	0.33 (0.16 – 0.67)	.002	0.49 (0.26 – 0.94)	.03	0.32 (0.15 – 0.68)	.003
Semi/low skilled manual job	1.95 (0.60 – 6.40)	.27	2.07 (0.54 – 7.92)	.29	2.40 (0.70 – 8.28)	.17	3.08 (0.71 –13.34)	.13
Psychosocial working conditions:								
Job demands	1.18 (0.77 - 1.82)	.44	0.98 (0.62 – 1.55)	.94	0.92 (0.58 – 1.45)	.71	0.75 (0.45 – 1.25)	.27
Job control	0.61 (0.32 – 1.16)	.13	0.24 (0.12 – 0.47)	<.001	0.83 (0.41 – 1.67)	.60	0.48 (0.23 – 1.02)	.06
Job support	0.44 (0.28 – 0.69)	<.001	0.43 (0.27 – 0.69)	.001	0.52 (0.32 – 0.85)	.008	0.60 (0.35 – 1.02)	.06
Number of working hours:	1.02 (1.00 – 1.03)	.009	1.00 (0.98 – 1.01)	.78	1.01 (1.00 – 1.03)	.02	1.00 (0.99 – 1.02)	.72

*adjusted for sex, age, education, somatic health and absence.

**Psychopathology characteristics were simultaneously tested in multivariable models.

term absenteeism (OR=1.57; 95% CI: 1.13 – 2.19). Moreover, remitted diagnoses of depressive disorders, but nut remitted anxiety disorders, were associated with short-term absenteeism (OR=1.49; 95% CI: 1.08 – 2.04) and long-term absenteeism (OR=1.46; 95% CI: 0.99 – 2.17). Compared to high grade non-manual workers, those in medium or low grade non-manual jobs had higher odds of short-term absenteeism (OR=1.36; 95% CI: 1.04 – 1.78). Self-employed persons tended to have lower odds of long-term absenteeism (OR=0.41; 95% CI: 0.16 – 1.10). Individually tested, higher job demands was associated with higher odds of long-term absenteeism (OR=1.83; 95% CI: 1.14 – 2.93), and higher job control and job support, were associated with lower odds of both short term absenteeism (OR=0.34; 95% CI: 0.18 – 0.63 and OR=0.58, ; 95% CI: 0.38 – 0.90 respectively) and long-term absenteeism (OR=0.17; 95% CI: 0.09 – 0.33 and OR=0.26; 95% CI: 0.16 – 0.42 respectively). A higher number of working hours was positively associated with higher odds of short- term absenteeism (OR=1.02; 95% CI:1.00 – 1.03) but not with long-term absenteeism. Testing all job characteristics and psychopathology variables simultaneously in adjusted multinominal regression models, job support (OR= 0.44; 95% CI: 0.25 – 0.76) and job control (OR= 0.41; 95% CI: 0.19 – 0.90) and being self-employed (OR= 0.35; 95% CI: 0.12 – 0.98) remained associated with lower odds of long-term absenteeism. Job control, but not job support was also associated with lower odds of short-term absenteeism (OR= 0.45; 95% CI; 0.23 – 0.87). More working hours and medium or low grade non-manual jobs remained also associated with higher odds of short term absenteeism. However, when simultaneously tested with job characteristics, odds of current diagnoses of depressive or anxiety disorders remained most prominently associated with higher odds of short term and long-term absenteeism.

We examined interaction effects of psychopathology and job characteristic variables by adding a current and remitted diagnose*job characteristic interaction terms in adjusted models with the individual job characteristic variable and current and remitted diagnose variables entered as well. None of the current or remitted diagnoses*job characteristics interaction terms was significantly associated with work absenteeism (< 2 weeks and ≥ 2 weeks).

Anxiety and depressive disorders, job characteristics, and the association with work performance

Consistently with the results for work absenteeism, diagnoses of depressive and anxiety disorders were strongly associated with high odds of reduced and impaired work performance (Table 3). In contrast with the results for absenteeism, remitted diagnoses of anxiety disorders were also associated with higher odds of impaired work functioning

(OR=1.84, 95% CI: 1.22 – 2.78). Compared to high grade non-manual jobs, persons with high skilled manual jobs had lower odds of impaired performance (OR= 0.33; 95% CI: 0.16 – 0.67). Number of working hours and higher job demands were not significantly associated with higher odds of reduced and impaired work performance, however, higher job control and job support were. The OR of impaired performance for job control = 0.24, 95% CI: 0.12 – 0.47 and for job support = 0.43; 95% CI: 0.27 – 0.69. When testing psychopathology and all job characteristics simultaneously in an adjusted multinominal regression model, self-employed and killed manual jobs were associated with lower odds of impaired work functioning (OR= 0.36; 95% CI: 0.16 – 0.87 and OR=0.32; 95% CI: 0.15 – 0.68 respectively). Also higher job support and high social support tended to remain associated with lower odds of impaired work performance (OR=0.48; 95% CI: 0.23 – 1.02 and 0.60; 95% CI: 0.35 – 1.02 respectively).

In line with the results of work absenteeism, none of the job characteristics showed interaction effects with current and remitted diagnoses, indicating that the effects of job characteristics on work performance were similar among persons with and without current and remitted diagnoses of anxiety and depressive disorders.

Discussion

The present study showed that independent of psychopathology, certain positive job characteristics countervail the risk of work absenteeism and performance risks. High job control, high job support and a lower number of working hours were found to be associated with lower odds of absenteeism and impaired work performance. In addition, occupational status was associated with work functioning. Being self-employed was associated with low odds of absenteeism, and both self-employed and high skilled manual workers had lower odds of impaired work performance. However, no indication was found that these job characteristics were particularly favourable for workers with current or remitted diagnoses of anxiety and depression, since there were no interaction effects of job characteristics with diagnoses of anxiety and depressive disorders.

Beside the effect of job control and job support, also some classes of occupational status showed impact on work functioning. Low skilled non-manual work was associated with short-term absenteeism, and self-employment with low absenteeism. Both skilled manual workers and self-employed had less reduced and impaired work performance. These effects remained significant in a model with psychopathology and psychosocial work characteristics, indicating an effect of these occupational status categories independently of psychosocial working conditions or psychopathology. The lower absence and impaired work

performance rates among self-employed workers may be partly explained by self-selection, a larger work drive, or a lack of disability insurances in this group, which would lead to substantially income effects if they do not work. Independently of psychosocial characteristics, high skilled manual jobs were also associated with less impaired work performance. However, the unadjusted absence rate was high among skilled manual workers (mean = 6.2 weeks in last 6 months, versus 5.8 in slow skilled manual jobs, 3.6 in low graded non-manual jobs, 3.0 in high graded non-manual jobs and 0.8 among self-employed) in this occupational category. This may indicate that on-the job functioning among skilled manual workers with depressive and anxiety disorders is very difficult.

Although occupational status was a factor associated with work functioning, particularly psychosocial working conditions might provide opportunities for strategies that may reduce impaired work functioning and prevent from job loss among workers with depressive and anxiety disorders. Although a higher level of job control does not protect workers with current depressive and anxiety disorders from long-term absence, on-the job support from colleagues, lower working hours and job demands may help to avoid absence and improve work performance among workers with current and remitted depressive and anxiety disorders. This knowledge about circumstances that can keep people in the labour market despite health problems is particularly important for policy aims. Jobs may be considered as important resources for well-being. Jobs are resources of economic capital (income), social capital (social support and social companionship by colleagues) as well as personal capital (self-realization) (Schaufeli W. & Bakker A, 2004). According to the Conservation of Resources (COR) theory (Hobfoll, 1989), resource loss has a disproportionately more salient effect on mental health than resource gain, and people with better resources are less vulnerable to resource loss and are more capable of organizing resource gain. In contrast, loss of a resource may initiate loss of other resources, and becomes a spiral (Westman et al., 2005). Therefore, it is important to find possible points of action, such as the level of job control and job support, for prevention of work-role impairment and job-loss as a consequence of depressive and anxiety disorders.

A limitation of this study is that, due to its cross-sectional design, it is impossible to draw conclusions of exact causal relationships between job characteristics and work functioning. Furthermore, the weak associations of job demands with work functioning in this study may be due to the way job demands were measured. High job demands can mean job overload, however, job demands may also be a challenge, which could be a positive job resource (Schaufeli W. & Bakker A, 2004). Because in the present study we were not able to distinguish between job demands in the sense of hindrance or challenge, in our measurement both aspects of job demands may outweigh each other. On the other hand, NESDA is a

unique opportunity to examine the relation between job characteristics and work functioning among a large sample of people with diagnosed anxiety and depressive disorders. The results of this study may help to develop policies and interventions to reduce incapacity to work as a result of depressive and anxiety disorders. Knowledge about favourable job characteristics for workers with health problems such as anxiety and depressive disorders is necessary to develop interventions that may reduce incapacity to work (Barnes et al., 2008). Whether favourable job characteristics can contribute to less impaired work functioning and job loss over time and influence return to work after absenteeism among workers with depressive and anxiety disorders is a question for future research. Jobs with relatively high levels of job control and support by colleagues and supervisors seem to be favourable, but psychopathology itself remains the most important risk factor for absenteeism and impaired work performance, that can hardly be reduced by favourable job characteristics.

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CHAPTER 8

DISCUSSION

DISCUSSION

In this dissertation, two directions of the relationship between work and mental health were explored. The first objective was to explore consequences of the work role and job characteristics for mental health. Additionally, the impact of mental disorders and the importance of job characteristics on functioning at work were examined. This chapter summarizes and discusses the main findings and implications for the occupational and mental health disciplines and for future research are given. Table 1 gives an overview of the main results of this dissertation.

Studies on work and mental health: main results and general conclusions

The effect of social roles on mental health

Because the effect of work on mental health may depend on the combination of work with other social roles, such as having a partner and having children, the first objective of this dissertation was to explore the impact of work as a social role and combinations with other social roles (partner, parent) on mental health. According to the social role accumulation theory (Sieber, 1974; Marks, 1977), occupying more social roles has a positive effect on mental health. On the other hand, according to the role strain perspective a combination of more social roles is a burden for particularly women's mental health (Frone, 2000; Wang, 2006). As shown in Chapter 2 and 3, a protective effect of having multiple social roles was found for the 12-month prevalence, but not for the 3-year incidence of depressive and anxiety disorders (Table 1). The protective effect of having multiple social roles on the prevalence of depressive and anxiety disorders was mainly caused by the individual effect of particularly the parent role. The work role was associated with a lower prevalence of depressive and anxiety disorders in men, but not in women. For women, having a job was not favourable, neither unfavourable for mental health. No indication was found for a role strain effect of multiple social roles on either prevalence or incidence of depressive and anxiety disorders. Occupying multiple social roles was not associated with higher prevalence or incidence of depressive and anxiety disorders. This may indicate that the number of occupied social roles is not relevant for the incidence of depressive and anxiety disorders. However, for the incidence of depressive and anxiety disorders, particularly the quality of these social roles seemed to be very important. As shown in Table 1, a good quality of the work role, as well as the partner and the parent role, were protective for the incidence of mental disorders.

Table 1. Overview of the contribution of social roles to the prevalence and incidence of depressive and anxiety disorders and consequences of social roles and psychopathology for work functioning

	Prevalence ♂ / ♀	Incidence ♂ / ♀	Poor Work Functioning
Number of social roles	– – / – –	ns / ns	
Work role:			
Having a job	– – / ns	ns / ns	
Good quality work role		– / –	
Job demands		++ / + + [1]	ns
Job control		ns / ns	– –
Job support			– –
Job security		ns / –	
Working hours	– – / ns	ns / ns	ns
Parent role:			
Having children	ns /ns	ns / ns	ns*
Age youngest child	ns /ns		
Number of children	– / ns	– / ns	
Good quality parent role		– / –	
Partner role:			
Having a partner	– – / – –	– / –	ns*
Good quality partner role		– – / – –	
Daily emotional support		– – / – –	
Psychopathology:			
Current depressive disorders			+ +
Remitted depressive disorders			+
Severity of depressive symptoms			++
Current anxiety disorders			++
Remitted anxiety disorders			+ [2]
Severity of anxiety symptoms			++

– – = strong favourable effect, indicating lower prevalence and incidence and better work functioning; – =favourable effect, + = unfavourable effect, indicating higher prevalence and incidence and poorer work functioning; ++ = strong unfavourable effect; ns = not significant, blank = not investigated;
*additional analyses, results not described in chapters
1. for depressive disorders only
2. for impaired work performance, but not absenteeism

As shown in Chapter 2, the work role individually had some protective effect on men's mental health, but this effect was not significant for women's mental health. Working men had a lower 12-month prevalence of depressive and anxiety disorders. For working women, there was a difference between women with and without children. Among women without children, having a job was also associated with a lower prevalence of depressive and anxiety disorders than among women without a job, but among women with children, having a job did not differentiate the prevalence of depressive and anxiety disorders. The work role also contributed to the explanation of the gender difference in the prevalence of depressive and anxiety disorders. Working in fulltime jobs was favourable for men's mental health and having no job or a small part-time job was strongly associated with poor mental health conditions. Among women, the work role was less strongly associated with mental health. Having a job combined with having children was neither advantageous nor disadvantageous for the prevalence of depressive and anxiety disorders. As demonstrated in Chapter 3, the work role had no significant effect on the incidence of depressive and anxiety disorders among men and women, neither did the work role contribute to the explanation of the gender difference in the incidence of depressive and anxiety disorders. The parent role had not a prominent effect on mental health, but the partner role was consistently associated with mental health outcomes. Having a partner, and particularly a good quality partner role, was strongly associated with a lower prevalence and incidence of depressive and anxiety disorders.

Job characteristics and the effect on employees' mental health

Since the quality of social roles seemed to be more important for mental health than the number of social roles or combinations of social roles, the next objective of this study was to focus on the quality of the work role and the effect on mental health. The quality of the work role had an effect on the incidence of depressive and anxiety disorders. A low quality work role increased the risk of depressive and anxiety disorders, and a high quality work role decreased this risk. Therefore, the effects of more detailed job characteristics on the incidence of depressive and anxiety disorders were examined in Chapter 4. Psychological job demands, decision latitude and job security were indicators for job content that were hypothesized to impact on mental health of employees (Karasek & Theorell, 1990). However, the results showed that only high psychological demands increased the 2-year incidence of depressive disorders, but not of anxiety disorders. Job control (decision latitude) was not associated with the incidence of depressive and anxiety disorders, and job security decreased the risk of anxiety disorders in women, but not in men.

Jobs, depressive and anxiety disorders and consequences for job functioning

Chapter 2, 3 and 4 demonstrate that work as a social role, as well as the specific characteristics of the job, have only partially effect on mental health. A risk factor for developing mental health problems, particularly depressive disorders, was high job demands. However, having a job is not negative for mental health, also not in combination with a parent role. Having a good quality job may even be a protective factor for developing depressive and anxiety disorders. And probably, having a (good quality) job may protect persons with depressive and anxiety disorders for a poorer course of their disease. Therefore it is important to know how persons with anxiety and depressive disorders function at work, and which psychopathological characteristics are particularly associated with poor work functioning, and which job characterises may help persons with depressive and anxiety disorders functioning as well as possible.

Psychopathological characteristics and functioning at work

Chapter 6 illustrates that problems with work function among persons with anxiety and depressive disorders are common. Long term absenteeism was seven times higher among persons with depressive disorders and two times higher among persons with anxiety disorders compared to persons without depressive or anxiety disorders. They also reported respectively five and two times higher rates of impaired work performance on days that they were not absent from work. Remarkably, also persons with remitted depressive disorders had (one and a half times) more long term absenteeism and impaired work performance. Workers with remitted anxiety disorders had no increased absence rates compared to workers without disorders, but similar to persons with remitted depressive disorder, they still reported more reduced and impaired work performance. Severity of depressive and anxiety symptoms was positively related with reduced work performance, suggesting a dose-response association. Beside this, there were some psychopathological characteristics that were associated with elevated risks for poor work functioning: comorbidity between anxiety and depression, chronic depression and –within the anxiety cluster- general anxiety disorder.

Favourable job characteristics for workers with depressive and anxiety disorders

In Chapter 5 and 7 some specific job characteristics were found to be associated with lower risks of absenteeism and reduced work performance. Positive experience at work and understanding reactions by colleagues may reduce work retention (Chapter 5). And in line with this, in Chapter 7 high levels of social support by co-workers and supervisors showed to be associated with reduced absenteeism and work performance impairment. Having more control over the job and a lower number of working hours were also associated with better

work functioning. However, these job characteristics were favourable for the work functioning among persons with and without depressive disorders, and no indication was found that these characteristics of the job were specifically or to a larger extent favourable for workers with depressive or anxiety disorders.

Gender difference in the prevalence and incidence of anxiety and depressive disorders

In this dissertation the two fold higher prevalence and incidence of anxiety and depressive disorders was confirmed, and in agreement with results of other studies (Aneshensel et al., 1981; Inaba et al., 2005; Piccinelli & Wilkinson, 2000). Job demands, daily emotional support, job control, occupying multiple social roles or specific social role combination did not contribute to the explanation of the gender difference in the incidence of depressive and anxiety disorders. Women experienced lower job demands and lower levels of decision latitude in their jobs, but reported higher levels of daily emotional support compared to men. And since particularly higher job demands and lower levels of daily emotional support were risk factors for the incidence of depressive and anxiety disorders, these characteristics can not explain the gender difference in mental health. The number of working hours contributed to the explanation of the gender difference in only the prevalence, but not the incidence, of depressive and anxiety disorders. However, this may particularly be driven by the negative effect of a low number of working hours for men. Men's risk for having a depressive or anxiety disorders decreased immense when they had a very low number of working hours, or even no job. For women, having a job or not, and working in small part-time jobs or full-time, did not differentiate the odds of having a depressive or anxiety disorders. Concerning mental health, women do not profit from jobs, but having a (full-time) job is neither disadvantageous.

General conclusions about the relationship between work and mental health

In general, jobs have no negative impact on mental health unless its psychological job demands are high. Good quality jobs can even protect workers for developing anxiety and depressive disorders. Particularly men profit from work concerning their mental health. Among women, the combination of work and having children is not favourable, but neither unfavourable for their mental health. Once having an anxiety or depressive disorders, the risk for work-absenteeism and poor work functioning (also called presenteeism) is high. Even (depressive) disorders in remission are associated with poorer work functioning and absenteeism. High social support at work and control over the job can reduce the risk of poor work functioning, but these job characteristics are favourable for all workers, and not predominantly for workers with depressive and anxiety disorders. The main results are

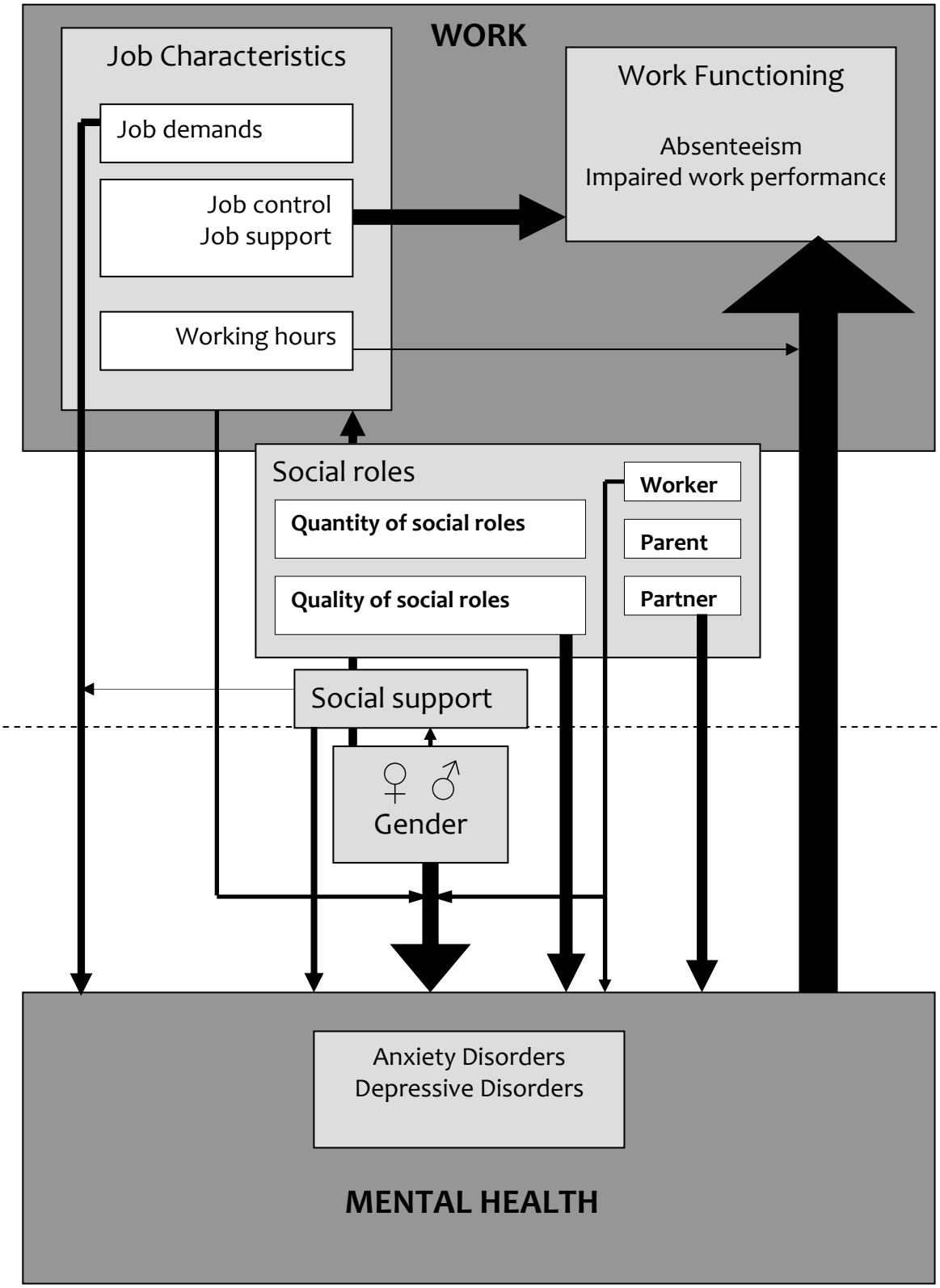
graphically illustrated in Model 1, in which strong associations and relationships are represented by a thicker arrow. This model was previously presented in the introduction of this dissertation.

Methodological considerations

Beside the methodological considerations and limitations concerning the individual studies of this dissertation (described in the individual chapters) there are some general methodological points that deserve some further attention.

Subjects with depressive and anxiety disorders

A main limitation in studies among persons with depressive and anxiety disorders is their tendency to evaluate their environment and subjective experiences more negatively than healthy persons, since negative thoughts and feelings are core symptoms of the (particularly depressive) disorder. All data we used in these studies are based upon self report, but particular job characteristics and job content variables, but also work functioning variables, are subjective variables and susceptible for the effect of differences in personal evaluation. This is particularly a limitation in cross-sectional studies, when measuring all data at one time point. Chapter 2, and also Chapter 5, 6 and 7 have cross-sectional designs, and therefore may be susceptible for this phenomenon. For Chapter 5, 6 and 7 this means that it is hard to draw exact conclusions about the direction of the relationship between depressive and anxiety disorders and work functioning: persons with disorders may have overestimated their absence rates, and underestimated their work performance, and evaluated their job characteristics more negatively than their healthy counterparts. In Chapter 2 the relationship of more objective variables with the prevalence of anxiety and depressive disorders were examined: whether subjects had a job, a partner and children. However, an effect of selection can have affected results in this chapter. It is likely that the healthiest persons will be able to occupy all three social roles, which may cause overestimation of the effect. Although the risk for a selection effect was reduced by selection of a sample without depressive or anxiety disorders during life time before the last year, and most subjects will have been occupying their social roles longer than last year, it is still possible that subjects with a vulnerability for anxiety and depressive disorders have had less opportunities to develop all three social roles. Therefore, the exact direction of the causal relationship is unclear, psychopathology can affect social roles and vice versa.



** strong associations and relationships are represented by a thicker arrow.*

Model 1. The relationship between work and mental health in the context of social roles, social support and gender*

Inconsistency in findings for prevalence and incidence of mental disorders

The relationship between having multiple social roles and the lower odds of prevalent depressive and anxiety disorders found in Chapter 2 was not in accordance with the results of Chapter 3. There was no relationship between the number of social roles and the incidence of depressive and anxiety disorders. The different results in these two studies may be due to methodological differences. In Chapter 3, a longitudinal design was used, and the difference between the results of the two studies may illustrate the risk of overestimating the effects found in Chapter 2 due to a selection effect. However, the two studies, both the population of the NEMESIS study, are based on different sub samples. For the cross-sectional study in Chapter 2, a sample of 3857 persons without any psychiatric diagnosis before the last 12 months was selected, in which associations of social roles with the prevalence of anxiety and depressive disorders during the last 12 months were examined. For the longitudinal study in Chapter 3, 2471 persons without any psychiatric diagnosis during lifetime at baseline were selected in which associations of baseline social roles with the change in mental health over 3 years were examined. The persons, who had a prevalent anxiety or depressive disorder in Chapter 2, were not selected in Chapter 3. The persons selected for the study in Chapter 3 were the healthiest persons, and they had on average more social roles than persons with psychopathology. The selection of this healthy and most 'successful' population may have reduced the effect of the number of social roles on the incidence of depressive and anxiety disorders. While in Chapter 2 a selection bias may have overestimated the effect of social roles on mental health, in Chapter 3 the effect may have been underestimated. Probably, the 'real effect' of multiple social roles on the development of depressive and anxiety is somewhere in between the two results of the both studies.

Job characteristics

In this dissertation, job characteristics were measured by the job content variables based upon Karasek's Job Demands-Control Model (Karasek & Theorell, 1990; Karasek et al., 1998) (Chapters 4 and 7) and in addition, the number of working hours and some occupational characteristics. Although these variables are used in many other studies, also other aspects of work that we did not measure may be important in the relationship between work and mental health. For example, we had no information about cultural atmosphere of the company, the distance between home and work, the meaning of the work role means for a person or exact information about career development and perspectives. Therefore, there may be other aspects of work that are important for developing anxiety and depressive disorders and that can prevent from poor work functioning among employees with depressive and anxiety disorders.

Explaining the gender difference in anxiety and depressive disorders

One of the aims of this study was to examine whether the work role and its job characteristics could contribute to the explanation of the gender difference in the prevalence and incidence of anxiety and depressive disorders. Since the work role had little effect on the prevalence and incidence of anxiety and depressive disorders among women, it is unlikely that job characteristics can further explain this gender difference in mental health. For explaining the gender difference in anxiety and depressive disorders, focussing on work and job characteristics seemed not very successful. More psychological constructs, such as coping strategies, or neuroticism, may have been more relevant for explaining the gender difference, and may have been a natural choice in these studies. However, addition of psychological measurements may have concealed effects of the social environment. The aim of this study was not to find differences in men's and women's biological or psychological characteristics, but to find possible inequality in the social environment that contribute to gender differences in mental health.

Implications for public health

Prevention of depressive and anxiety disorders

Having job is favourable for better mental health, particularly among men. However, the work role, even in combination with other social roles, was not harmful for women's mental health. Particularly the combination of a job with parenthood seemed to reduce the protective effect of work for anxiety and depressive disorders among women, but not among men. Probably providing good childcare arrangements and stimulation of equal distribution of childcare tasks between spouses may help to avoid the reduction of the protective effect of work when women have children. Because women tend to reduce their number of working hours as soon as they get children, this may reduce the quality of the job in the sense of career perspectives among women and contribute to the gender inequality of occupational level. Differences in the meaning of the work role between both genders may explain why men seem to profit more from work than women. In western society, the work role may be the most important role for men's identity, whereas for women motherhood is traditionally still important besides a growing importance of the work role. More than men, women may be mangled between both roles. Active participation in parent and work roles among men and women may improve happiness among both genders. And the work role may be an opportunity for improving women's mental health that is not exhausted yet.

More than the number of social roles and the combination of the work role with other social roles, the quality of the individual social roles is an important factor for prevention of depressive and anxiety disorders. There was no indication that combination of more social roles increased the risk of depressive and anxiety disorders. It rather tended to be positive for mental health. Combining work with family roles (parent, partner) is not harmful for mental health, not among men, nor among women, as long as the quality of the individual roles is good, and preferably, there is a partner.

For mental health, the most important social role was the parent role. A partner is a resource for daily emotional support (Turner R.J. & Marino, 1994) and daily emotional support is a protective factor for the incidence of depressive and anxiety disorders (see Chapter 4). Awareness of this strong positive effect of the partner role is important in prevention of mental disorders. The growing number of single, non-cohabiting adults in our society (Lesthaeghe & G.MOORS, 2000), should be a matter of concern for public health care and policymakers.

Prevention of work loss among persons with depressive and anxiety disorders

Jobs in which workers with anxiety and depressive disorders experience high levels of social support and high control over tasks can help to prevent from poor work functioning and long term sickens absence. Paying attention to these job characteristics by the occupational medicine discipline may provide opportunities to improve work functioning among persons with depressive and anxiety disorders, and may reduce the high costs caused by mental disorders in the work place. However, psychopathology itself remains the most important risk factor for impaired work functioning. It is important to be aware of the differentiated effect of severity, duration, type and comorbidity of depressive and anxiety disorders, and even an elevated risk of poor work functioning among employees with remitted disorders. Therefore, to reduce productivity related costs, investment in mental health promotion should concern both employers as well as policymakers in public health.

Implications for future research

In this dissertation, the association between job characteristics and work functioning among employees with depressive and anxiety disorders was examined cross-sectionally. This implicated that it is impossible to explore the exact causal relationship between psychopathology, work functioning and job characteristics. To derive more insight into the course of depressive and anxiety disorders and the relationship with long term absence, work

performance impairment and job characteristics, a longitudinal study should be preferable. The rather new perspective of reducing work function impairment among employees with psychopathology deserves prolonging attention in future research. To know more about specific needs at the workplace among employees with psychopathology may prevent from job loss and probably provides opportunities to avoid poorer course of illness. Although anxiety and depressive disorders are common mental disorders, it also may be helpful to examine and differentiate the effect of job characteristics and work functioning in other groups of mental disorders: psychotic disorders, personality disorders, substance disorders, ADHD and autism. Also examining effects of gender, and the lack or presence of other social (family) roles and social support may increase insight in specific needs among employees with psychopathology. Beside the importance of knowledge about biological and psychological pathways for developing psychopathology and the course of it, it is also remains important to find opportunities for adaptations in the social environment (e.g. work) that can reduce the negative effect of psychopathology for individuals as well as for society.

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SUMMARY / SAMENVATTING

SUMMARY

This dissertation focuses on two directions in the relationship between work and mental health. It examines consequences of work aspects for mental health, but also the effect of having depressive or anxiety disorders on functioning at work. The first question was whether specific combinations of the work role with family roles (having a partner and being a parent), result in anxiety and depressive disorders. Also the relationship between specific job characteristics with depressive and anxiety disorders was explored. Because the prevalence of depressive and anxiety disorders among women is twice the prevalence among men, also gender differences in the relationship between aspects of work and mental health were examined. Aspects of work in the sense of poor job characteristics or burdensome work and family role combinations may play a role in the explanation of the gender difference in mental health.

Depressive and anxiety disorders have enormous impact on functioning at work, such as absenteeism and poorer work performance while present at work. Therefore, it would be helpful to know more about specific depressive and anxiety symptoms that make job performance difficult. Which specific job characteristics may help persons with depressive and anxiety disorders to perform better at work, and which specific job characteristics may help to prevent absenteeism among depressed or anxious workers? The theoretical background and a model showing the supposed relationship between work and mental health on which this thesis was based, are presented in **Chapter 1**.

In **Chapter 2** the associations of social roles combinations (work-role, partner-role and parent-role) with the prevalence of depressive and anxiety disorders were examined using data from NEMESIS (n=7076). In this study also the contribution to the explanation of the female preponderance in the prevalence of depressive and anxiety disorders by the impact of social role combinations was explored. The results of this study showed that having more social roles was associated with a lower prevalence of depressive and anxiety disorders among both men and women. The work role, and particularly a higher number of working hours, was associated with a lower prevalence of depressive and anxiety disorders. However, concerning their mental health, men seemed to profit more than women from the work role. The positive effect of a high number of working hours on mental health also contributed to the explanation of the gender difference in the prevalence of depressive and anxiety disorders. Beside that, the partner role was a strong protective factor for mental disorders among both men and women, but the parent role had not such a pronounced effect. There was no indication found that the combination of more social roles (work and family roles) had a

negative effect on women's mental health. Because most healthy persons will be able to conduct more social roles, for the study in Chapter 2 a sample of persons without lifetime diagnoses of any mental disorder was selected to reduce this possible selection effect. However, the cross-sectional design of this study makes it impossible to draw any tentative conclusion about causality.

In **Chapter 3** the relationship between social roles and mental health over three years was examined in the NEMESIS study (n=7076). The longitudinal design of this study may help to explore the causal relationship between occupying multiple social roles and the incidence of depressive and anxiety disorders. In this chapter, a protective effect of multiple social roles over three years was only found for symptoms of depressive and anxiety disorders, but there was no evidence found for a higher risk or protective effect of having multiple social roles on developing diagnoses of depressive and anxiety disorders. Consistently with the results from Chapter 2, particularly the partner role had a strong positive effect on mental health. And more than the number of social roles, the quality of social roles seemed important for mental health. A poor quality of the work role seemed to be an indicator for poor mental health over three years. There was some indication that a good quality partner role, may buffer negative effects of a low quality work role on mental health. The effects of social roles on 3-year mental health in this study were similar for men and women.

Since the quality of social roles may be more important for mental health than the quantity of social roles, as concluded in Chapter 3, **Chapter 4** focuses on the quality of the work-role and examines its consequences for mental health data from NEMESIS (n=7076). According to the job demands/control model {Karasek, 1990 37 /id}, high psychological demands is an unfavourable job characteristic for mental health, particularly in combination with low job control (decision latitude) and low job security. Daily emotional support may buffer the effect of poor job characteristic on mental health. The results confirmed a causal relationship between higher psychological demands of a job with higher risks for depressive (and not anxiety) disorders, but no relationship of job control and job security with the incidence of depressive or anxiety disorders was found. Daily emotional support had a strong protective effect on the incidence of depressive (but not anxiety) disorders. Daily emotional support tended to be a conditional factor for the effects of job control and psychological demands. Neither working conditions, nor daily emotional support seemed to be an explanatory factor for the gender difference in the incidence of depressive and anxiety disorders.

The second part of this dissertation describes the effect of mental health on work functioning. Workers with mental disorders are likely to have problems with work functioning

and often get incapacitated for work. However, the ability to work for a person with mental health problems may also depend on specific characteristics of the job. In *Chapter 5* the association between reactions at work and being fit for work in a sample of 135 outpatients of a psychiatric clinic, AMSTAD (Amsterdam Study of Anxiety and Depression) was examined. A conclusion of this study was that understanding reactions at work from colleagues or supervisors were an important factor in determining the ability to stay in the job despite of a mental vulnerability.

Chapter 6 describes the results from a study among 1876 working men and women from NESDA (Netherlands Study of Depression and Anxiety, n =2981) with and without CIDI/DSM-IV diagnosed depressive and anxiety disorders, in which associations of more detailed psychopathological characteristics of depressive and anxiety disorders in the association with work functioning were examined and compared. The psychopathological characteristics were presence, comorbidity, type, duration and severity of depressive and anxiety disorders. As dependent variable, two measures of work functioning were used: absenteeism and decreased work performance while working. This study shows that depressive and anxiety disorders are associated with high odds of long-term absence and impaired work performance. More severe symptoms, comorbidity of depressive and anxiety disorders and a longer duration of the disorders increase odds of poor work functioning. Even persons with remitted diagnoses of depressive and anxiety disorders still have higher odds of poor work functioning. This is new and additional information in the knowledge about the association of psychopathology and work functioning, that can be very helpful for treatment and recognition of depressive and anxiety disorders and prevention of impaired work functioning among employees.

The study presented in **Chapter 7** examined the role of job characteristics in the association between psychopathology and work functioning. For this study, a sample of NESDA (Netherlands Study of Depression and Anxiety, N= 2981) was used. It shows that certain positive job characteristics countervail the risk of work absenteeism and performance risks. High job control, high job support and a lower number of working hours were found to be associated with lower odds of absenteeism and impaired work performance. In addition, occupational status was associated with work functioning. Being self-employed was associated with low odds of absenteeism, and both self-employed and high skilled manual workers had lower odds of impaired work performance. However, no indication was found that these job characteristics were particularly favourable for workers with current or remitted diagnoses of anxiety and depression.

SUMMARY

The main results of this thesis are given in the discussion chapter (8). Having a job is mainly favourable for better mental health, though high job demands at work is a risk factor for the incidence of depressive (and not anxiety) disorders. Having a job was not harmful for women's mental health, even in combination with other social roles; the effect of having a job was particularly favourable for men's mental health. Important positive factors were a good quality of social roles and the presence of a partner.

High levels of social support and control over work tasks can help to prevent from poor work functioning and long term absenteeism among workers with anxiety and depressive disorders. Though psychopathology itself remains the most important risk factor for impaired work functioning, paying attention to job characteristics by the occupational medicine discipline may provide opportunities to improve work functioning among persons with depressive and anxiety disorders. It may help to reduce high costs caused by mental disorders in the work place.

SAMENVATTING

Werk en Psychische Gezondheid: Studies naar de invloed van werk kenmerken, sociale rollen en gender

In de jaren negentig werd duidelijk dat steeds meer werknemers in Nederland, waaronder in toenemende mate vrouwen, langdurig arbeidsongeschikt raakten vanwege psychische stoornissen. Depressies en angststoornissen vormen samen de grootste groep veelvoorkomende psychische stoornissen, die arbeidsuitval veroorzaken. Dit proefschrift heeft tot doel meer te weten te komen over de relatie tussen werk en psychische stoornissen zoals depressies en angststoornissen. Worden mensen ziek van bepaalde omstandigheden op het werk, of door de combinatie van werk met andere verantwoordelijkheden (sociale rollen), zoals de zorg voor een gezin? En wat gebeurt er als een werknemer een depressie of angststoornis heeft? Kan hij of zij dan nog wel werken? Zijn er bepaalde omstandigheden op het werk die helpen het werk ondanks de klachten langer vol te houden? Als we beter zouden weten welke werkkenmerken de kans op depressies en angststoornissen verhogen, en welke werkomstandigheden disfunctioneren en ziekteverzuim bij mensen met angst of depressies kunnen helpen verminderen of zelfs voorkomen, zouden er veel maatschappelijke en bedrijfskosten en persoonlijk leed bespaard kunnen worden. Want wie eenmaal langdurig door psychische stoornissen thuis komt te zitten, heeft vaak grote moeite op de arbeidsmarkt terug te keren, en loopt het risico ook op andere levensterreinen een stap terug te moeten doen (zoals financiën, huisvesting, sociale contacten).

Voor vrouwen is de kans om een depressie of angststoornis te krijgen twee keer groter dan voor mannen. Vaak wordt gedacht dat overbelasting door de combinatie van betaalde arbeid met zorgtaken voor het gezin bij vrouwen hierin een rol in speelt. In Nederland doen vrouwen pas in de laatste decennia massaal hun intrede op de arbeidsmarkt. Ze hadden/hebben een achterstand qua arbeidspositie ten opzichte van mannen in te halen. Vrouwen in Nederland hebben gemiddeld een kleiner dienstverband, een minder hoge positie in het bedrijf en hebben doorgaans minder goede arbeidsvoorwaarden en arbeidsomstandigheden dan mannen. Deze minder goede werkomstandigheden bij vrouwen zouden een rol kunnen spelen bij het hogere aantal depressies en angststoornissen onder vrouwen.

SAMENVATTING

Het effect van sociale rollen op de psychische gezondheid

Volgens theorieën over sociale rollen en psychische gezondheid, kan het hebben van meerdere sociale rollen tegelijkertijd, zoals werknemer in combinatie met partner en ouder zijn, zowel een positief als een negatief effect op de psychische gezondheid hebben. Volgens theorieën die het hebben van meerdere sociale rollen als positief voor de psychische gezondheid zien, heeft iemand die meerdere sociale rollen vervult ook meer 'bronnen' waaruit geput kan worden voor diens welzijn. Voorbeelden daarvan zijn sociale steun van een partner, en collega's, financiële middelen door eigen inkomsten en inkomsten van een partner, mogelijkheden tot zelfverwerkelijking zowel op het werk als in het gezinsleven. De verschillende rollen bieden ook de mogelijkheid 'de zinnen te verzetten': als het op het werk niet zo lekker is gegaan, kan het samenzijn met een partner of gezin afleiding bieden en nieuwe energie opleveren.

In theorieën die stellen dat het hebben van meerdere sociale rollen juist een negatief effect heeft op de psychische gezondheid, vormt het hebben van meerdere rollen juist een bron van stress. Vooral onder vrouwen die in de traditionele taakverdeling tussen mannen en vrouwen de meeste zorgtaken in het huishouden op zich nemen, zou de combinatie gezin en betaalde arbeid een risico zijn voor stressklachten die tot angst en depressieve stoornissen kunnen leiden. De dubbele belasting van zorgtaken en betaalde arbeid kan immers een groot beroep doen op iemands fysieke energie en tijd. Maar het vraagt ook mentale flexibiliteit als moet worden overgeschakeld van de ene naar de andere rol. In dit proefschrift is het effect van meerdere sociale rollen voor de psychische gezondheid onderzocht, waarbij ook de mogelijke verschillen hierin bij mannen en vrouwen zijn bestudeerd. In **Hoofdstuk 1** wordt de theoretische acthergrond van dit proefschrift beschreven.

In **Hoofdstuk 2** wordt een studie onder 3857 mensen tussen 25 en 55 jaar beschreven waarbij met gegevens van het NEMESIS onderzoek (Trimbos Instituut, N=7076) het verband tussen sociale rollen en het voorkomen van angst en depressies is getoetst. Hierbij is ook naar het verschil tussen mannen en vrouwen gekeken. Het hebben van meerdere sociale rollen tegelijkertijd, bleek sterk geassocieerd met een verminderde kans op depressies en angststoornissen, bij zowel mannen als vrouwen. Daarnaast was er ook een verband tussen het hebben van (veel uren) werk en een verminderde kans op depressie en angststoornissen bij mannen. Dit gunstige effect van werk was er niet bij vrouwen, maar we hebben ook geen aanwijzingen gevonden dat het hebben van veel werk de kans op depressies en angststoornissen bij vrouwen vergroot. Daarnaast bleek dat het hebben van een partner bij zowel mannen als vrouwen de kans op een depressie of angststoornis sterk verminderde. De ouderrol had geen duidelijk effect op de psychische gezondheid. Er werden geen

aanwijzingen gevonden dat het hebben van meerdere sociale rollen een negatief effect voor de psychische gezondheid van mannen of vrouwen heeft.

Een nadeel van de onderzoeksmethode die voor de studie in hoofdstuk 1 is gebruikt, is dat het aantal sociale rollen en het hebben van een psychische stoornis op hetzelfde tijdstip zijn gemeten (cross-sectioneel design). De kans bestaat dat mensen die psychisch het meest gezond zijn, ook het best in staat zijn de drie rollen van werknemer, partner en ouder te vervullen (selectie-effect). Daarom is het niet met zekerheid te zeggen of het hebben van alle drie de rollen tot minder psychische klachten leidt, of dat het hebben van psychische problemen er juist de oorzaak van is dat men niet deze drie sociale rollen tegelijkertijd vervult. Hoewel voor deze studie alleen personen geselecteerd waren die nooit eerder dan in het afgelopen jaar een psychische stoornis hebben gehad, zou er meer gezegd kunnen worden over oorzaak en gevolg in een studie waarin het verband in een bepaalde tijdsspanne wordt onderzocht (longitudinal design). Daarom hebben we voor de studie in **Hoofdstuk 3** 2471 respondenten van het NEMESIS onderzoek geselecteerd die nog nooit een depressie of angststoornis hadden gehad, en in deze groep het verband onderzocht tussen de sociale rollen die zij op een gegeven tijdstip hadden, en de ontwikkeling van depressies en angststoornissen in de drie jaar daarna.

In deze studie vonden we enige aanwijzingen voor een beschermend effect van meerdere sociale rollen op het ontstaan van symptomen van angst en depressie. Echter, een beschermend effect voor het ontstaan van een depressie of angststoornis, die voldoet aan de standaard diagnostische criteria, kon niet worden aangetoond. En ook nu bleek de partnerrol een belangrijke factor, die een sterk beschermend effect blijkt te hebben op het ontwikkelen van depressies en angststoornissen. Maar vooral de kwaliteit van de sociale rollen bleek belangrijk. Een goede kwaliteit van de werkrol, partnerrol en/of ouderrol, waren indicatoren voor een verminderd risico voor depressies en angststoornissen drie jaar later. We vonden geen verschillen tussen mannen en vrouwen in het effect van sociale rollen op de psychische gezondheid.

De belangrijkste boodschap van deze studie is daarom dat het niet zozeer gaat om het aantal rollen, of rolcombinaties die iemand heeft, maar dat de kwaliteit van die individuele rollen een belangrijkere indicator is voor de psychische gezondheid op langere termijn.

Werkkenmerken/kwaliteit van de arbeid en het effect op de psychische gezondheid van werknemers

Nu voor de psychische gezondheid de kwaliteit van de individuele sociale rollen belangrijker blijkt te zijn dan het aantal sociale rollen, is vervolgens het belang van de kwaliteit van de

werkrol voor de psychische gezondheid bij werknemers onderzocht. Volgens het Job Demands/Control model, is het hebben van een hoge werkdruk een risico voor het ontstaan van (psychische) gezondheidsklachten, vooral in combinatie met weinig mogelijkheden zelf beslissingen te nemen op het werk (controle) en weinig werkzekerheid (zoals tijdelijk werk). Mogelijk zou een hoge mate van dagelijkse sociale steun een bufferende rol kunnen hebben in de relatie tussen werkomstandigheden en psychische stoornissen. Dit verband is in **Hoofdstuk 4** onderzocht bij een groep van 3048 werkenden uit de NEMESIS populatie zonder depressies en angststoornissen. We hebben onderzocht of het hebben van een hoge werkdruk, veel controle op het werk en werkzekerheid, gemeten op een tijdstip, verband houdt met het ontwikkelen van depressies en angststoornissen in een periode van twee jaar daarna. In ons onderzoek vonden we slechts gedeeltelijke steun voor het Job Demands/Control model. Alleen een hoge werkdruk bleek samen te gaan met een verhoogd het risico voor het ontwikkelen van depressieve stoornissen (en niet voor angststoornissen) twee jaar later. Er was geen aantoonbaar verband tussen het hebben van weinig controle op het werk en een verhoogde kans op depressies of angststoornissen. Minder werkzekerheid leidde wel tot een verhoogd risico voor angststoornissen alleen bij vrouwen en niet bij mannen. Dagelijkse emotionele steun was een beschermende factor voor het ontstaan van depressieve (maar niet angst-) stoornissen. Geen van de onderzochte werkkenmerken, noch dagelijkse emotionele steun, leverden een bijdrage aan de verklaring voor het genderverschil in de kans op depressies en angststoornissen.

Effecten van depressies en angststoornissen voor het werkfunctioneren

In het tweede gedeelte van dit proefschrift zijn de effecten van depressies en angststoornissen op het werkfunctioneren onderzocht. Daarnaast zijn ook werkkenmerken die mogelijk disfunctioneren op het werk bij mensen met psychopathologie kunnen helpen voorkomen, bestudeerd.

Hoofdstuk 5 is een beschrijving van een studie naar reacties op het werk door collega's en leidinggevenden op werknemers met psychische klachten en de samenhang met het werkfunctioneren (arbeidsgeschiktheid). Hiervoor werden gegevens van AMSTAD (Amsterdam Study of Anxiety and Depression) gebruikt. Er werden 135 cliënten van een psychiatrische polikliniek (GGZ Buitenamstel, nu GGZ inGeest) hiervoor geselecteerd, bij wie onder andere werd nagegaan of zij de reacties op het werk door collega's en leidinggevenden op hun psychische stoornis als begripvol of niet beoordeelden. Een van de conclusies was dat begripvolle reacties op het werk voor mensen met psychische stoornissen een factor lijkt die ertoe bijdraagt aan het werk te blijven.

Vervolgens werden meer gedetailleerde psychopathologische kenmerken van depressies en angststoornissen onderzocht in verband met werkfunctioneren (**Hoofdstuk 6**). Hiervoor werden 1876 werkenden van de NESDA studie (Netherlands Study of Depression and Anxiety, n =2981) met en zonder CIDI/DSM-IV gediagnosticeerde depressies en angst stoornissen disorders geselecteerd. De kenmerken die werden onderzocht zijn de aanwezigheid en co-morbiditeit (het tegelijkertijd voorkomen) van depressies en angststoornissen, maar ook het type, de duur en de ernst van de depressie en/of angststoornis. Van deze kenmerken werd het effect op twee verschillende aspecten van het werkfunctioneren getoetst: ziekteverzuim en de uitvoering van het werk op dagen dat de werknemer last had van depressie of angst, maar wel op het werk was. De studie toont in overeenstemming met eerdere studies aan dat depressies en angststoornissen geassocieerd zijn met een sterk verhoogd risico voor langdurig ziekteverzuim en ernstig verminderd functioneren op het werk. Depressieve klachten lijken een sterker effect te hebben op het werkfunctioneren dan angststoornissen. Ernstige symptomen, co-morbiditeit en een lange duur van de stoornissen verhogen de kans op ernstig verminderd werkfunctioneren. Er werd ook een verhoogde kans op verminderd werkfunctioneren gevonden bij personen die in het verleden een depressieve stoornis hadden gehad. Dit is nieuwe en aanvullende informatie in de bestaande kennis over de relatie tussen psychopathologie en werkfunctioneren. Het maakt duidelijk dat deze stoornissen een zeer ernstig effect hebben op het functioneren in het werk ook op lange termijn/ dat ook lang aanhoudt. Het is daarom belangrijk om factoren te vinden die deze schade voor het werkfunctioneren bij mensen met depressies en angststoornissen kunnen helpen verminderen.

In **Hoofdstuk 7** is de rol van een aantal werkkarakteristieken in de relatie tussen psychopathologie en werkfunctioneren bestudeerd. Voor deze studie waren 1416 werkende respondenten van de NESDA studie (the Netherlands Study of Depression and Anxiety, N= 2981) geselecteerd. Veel controle over het werk, veel sociale steun op het werk en minder werkuren lijken de kans op ziekteverzuim en verminderde werkuitvoering te verminderen. Ook bepaalde beroepsgroepen, namelijk zelfstandig ondernemers en hooggeschoolde handarbeiders rapporteerden minder verstoringen van hun functioneren op het werk. Echter, deze werkkenmerken hadden een gunstig effect op het werkfunctioneren bij zowel mensen met als zonder psychopathologie, en waren niet in het bijzonder gunstig voor mensen met depressies en angststoornissen. Bovendien zouden de symptomen van depressie en angststoornissen een rol kunnen hebben gespeeld in de beoordeling van de werkkenmerken in deze onderzoekspopulatie. Ook hier is longitudinaal onderzoek nodig om meer te kunnen zeggen over de causale relatie tussen werkkenmerken en werkfunctioneren bij deze groep. Toch zijn het hebben van voldoende sociale steun en controle op het werk mogelijke

aangrijpingspunten in de behandeling en begeleiding van mensen met depressies en angststoornissen, die het risico van langdurige arbeidsuitval en de schadelijke gevolgen daarvan kunnen helpen verminderen.

De belangrijkste resultaten uit dit proefschrift zijn beschreven in **Hoofdstuk 8**. Het hebben van betaald werk lijkt over het algemeen positief voor de psychische gezondheid. Een hoge werkdruk is een risicofactor voor het ontwikkelen van depressies bij werknemers. Hoewel het hebben van werk vooral gunstig leek voor de psychische gezondheid bij mannen, was het hebben van werk niet ongunstig voor de psychische gezondheid bij vrouwen, ook niet als zij het werk combineerden met het hebben van een partner en kinderen. Vooral een goede kwaliteit van de individuele sociale rollen en de aanwezigheid van een partner waren positieve factoren die de kans op depressies en angststoornissen verminderen.

Op het werk zijn veel sociale steun en controle over het werk factoren die mogelijk kunnen bijdragen aan het voorkomen van verminderd werkfunctioneren, ook bij mensen met depressies en angststoornissen. Depressies en angststoornissen blijven op zich een groot risico voor problemen met het werkfunctioneren. Maar aandacht van behandelaren en verzuimbegeleiders voor werkkenmerken, zoals controle over de taken en sociale steun door collega's, kunnen mogelijk bijdragen aan het voorkomen van langdurig verzuim en verdere negatieve gevolgen voor het beloop van de stoornis bij hun cliënten. Als gunstige werkomstandigheden bij werknemers met depressies of angststoornissen arbeidsuitval kunnen helpen voorkomen, zal dat de financiële gevolgen voor werkgever en overheid kunnen reduceren. Maar bovenal zou daarmee een ongunstiger beloop van de ziekte voorkomen kunnen worden, en de kwaliteit van leven bij mensen met depressies of angststoornis verbeteren. Of werkkenmerken ook op langere termijn bijdragen aan minder disfunctioneren op het werk en een gunstiger ziektebeloop bij mensen met depressies en angststoornissen, zou in een longitudinale studie nader onderzocht moeten worden.

Hoe kon ik nou vermoeden dat mijn besluit te gaan studeren op een promotie zou uitlopen? Dat was dan ook niet het eerste doel dat ik had toen ik aan mijn studie maatschappelijke vraagstukken en beleid begon. Ik was ook enigszins onzeker over de zin ervan, maar Robert Delsasso, destijds teamleider van de open opname afdeling in de Valeriuskliniek, noemde het een 'keihard plan'. Dus Robert, jij bent de eerste in de rij mensen die ik dankbaar ben om hun bereidheid mij niets in de weg te leggen die tot dit boekje heeft geleid. Mijn keuze voor de studie 'maatschappelijke vraagstukken en beleid', parttime en verkort, was in de roos. Alice Dabekousen, jij was mijn trouwe gezellige studiemaatje, en onze avondcolleges beschouwden we als 'avondje uit'. Vooral als daar een mensamaaltijd aan vooraf ging!

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CURRICULUM VITAE

Inger Plaisier werd op 3 september 1963 geboren in Vlaardingen. Haar middelbare schooltijd bracht zij door in Harderwijk, waar zij in 1981 het Atheneum B diploma haalde aan het Christelijk College Nassau Veluwe. Daarna vertrok zij naar Amersfoort om aan de Academie voor Beeldende Vorming de eerstegraads lerarenopleiding tekenen te volgen. Na een jaar besloot zij dit voort te zetten aan de Hogeschool Holland in Diemen, waar zij in 1988 de akte Tekenen en Textiele Werkvormen behaalde. Na een jaar in verschillende baantjes te hebben gewerkt besloot zij het roer om te gooien en de opleiding tot Psychiatrisch Verpleegkundige te gaan doen, in het toenmalige Psychiatrisch Centrum Amsterdam. In 1992 ging zij als gediplomeerd verpleegkundige werken op de Open Opname afdeling in de Valeriuskliniek. Vanaf 1999 werkte zij daar als nachtverpleegkundige en combineerde dit met de deeltijdstudie Sociaal Culturele Wetenschappen, opleidingsvariant Maatschappelijke Vraagstukken en Beleid, aan de Vrije Universiteit te Amsterdam. Zij behaalde haar doctoraalexamen in november 2003 Cum Laude. Voor haar scriptie met de titel 'Gek op je Werk, factoren voor werkbehoud bij mensen met psychische stoornissen' kreeg zij op de dag van de Sociologie in 2004 een eervolle vermelding. Tussen 2001 en 2004 was zij werkzaam als coördinerend onderzoeksverpleegkundige bij AMSTAD, de Amsterdamse Studie naar Angst en Depressie. Hier maakte zij kennis met verschillende facetten van het veldwerk voor onderzoek. Zij werkte mee aan de dataverzameling voor AMSTAD en overig verwant onderzoek binnen GGZ Buitenamstel / Vrije Universiteit (IPT studie en Stabilisatieproject voor vrouwen met een Chronisch Posttraumatische Stressstoornis). Daarnaast trainde zij interviewers en deed diagnostische interviews ten behoeve van de intakeprocedure van cliënten voor de psychiatrische polikliniek. In januari 2004 begon zij als promovenda aan de Faculteit Sociale Wetenschappen, afdeling Sociologie en NESDA, GGZinGeest, met dit proefschrift als eindresultaat. Sinds november 2008 is zij ook werkzaam bij MEE Amstel & Zaan als coördinator van het convenant autisme in de regio (groot) Amsterdam, dat tot doel heeft de zorg voor mensen met autisme te verbeteren. Zij is 'spin in 't web' van een groot netwerk van professionals uit verschillende organisaties op gebied van zorg, onderwijs, woonbegeleiding, arbeidstraining, en leden van de patiëntenvereniging.

Zij is gehuwd met Peter Lanting, en samen hebben zij twee kinderen, Vincent (1994) en Ernst (1998).

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